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ABSTRACT

This guide presents tasks a planning group should consider when implementing a program. Although implementation may not occur in this sequence, the total array of implementation tasks includes selecting a planning group leader, defining the problem, selecting objectives, designing the program, developing an implementation plan, developing an evaluation plan, securing approval of the plan and budget, operating the program, concluding the plans, evaluating the program, and determining the program's future. The development of an implementation plan receives major attention; detailed directions and suggestions for accomplishing 12 subtasks are given. The subtasks include writing a group mission statement; determining personnel requirements, material resources, and school readiness; planning the staff selection, purchasing schedule, staff orientation; determining costs and the sequence of tasks; establishing a timeline; and arranging an independent review of the plan. A suggested structure for the planning group session is provided. (Author/DW)

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PLANNING PROGRAM IMPLEMENTATION -A PROCESS GUIDE

FAR WEST LABORATORY SERIES IN INSTRUCTIONAL PLANNING

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PLANNING FOR PROGRAM IMPLEMENTATION

A PROCESS GUIDE

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PREFACE

Instructional program planning is only one aspect of educational management, but it is of crucial importance to the improvement of education and cuts across all levels of school management, administration, and teaching. The Educational Management Program of the Far West Laboratory, under the auspices of the U.S. Office of Education and the National Institute of Education, has developed products designed to help school staff and others in instructional program planning and evaluation.

The intended primary users are:

- building principals
- curriculum directors
- teachers

when they are involved in program planning.

Depending on the size and organization of a school district, the materials may also be useful to:

- district office administrators
- board of education members

who make decisions about program adoption.

- parents
- students

who contribute to program planning.

The instructional program planning materials concentrate on increasing:

- skills required for good instructional planning;
- knowledge needed to choose and use skills appropriate to particular planning problems; and
- understanding of the importance and relationship of instructional planning to other aspects of educational endeavor.

The materials available consist of separate units in:

- Setting Goals

- * Analyzing Problems
- * Deriving Objectives
- * Designing Instructional Programs
- * Planning Program Implementation
- * Evaluation for Program Improvement

The units were developed in the above order, which suggests one sequence to follow in instructional planning, although of course the sequence suggested is not the only possible one. Schools are at different stages of program planning and could begin at various points along the continuum.

This unit deals with Planning Program Implementation. It provides school staffs with an approach to developing implementation plans for instructional programs or projects. This approach presents guidelines for considering the various aspects of program design in terms of their implications for implementation. It emphasizes that careful planning of educational interventions in existing school programs is important in order to develop the human potential of the staff as well as provide a worthwhile learning experience.

Rather than presenting a self-contained training program which may be incompatible with a district's particular values, needs, goals, objectives, resources, and circumstances, this process guide uses a participative management style which helps a staff deal with the implementation issues relevant to their own programs.

The unit is directed primarily at the school level, where planning problems are most often shared, but may also be used by a district level staff who share a problem. It presents one approach to instructional planning and should therefore be used as a guide to thoughtful planning rather than as a book of rules which must be rigidly followed. The unit consists of the following major parts:

- Section I, an introduction describing the use of the unit, the approach taken, the assumptions upon which the unit is based, and the goals of the unit.
- Section II, the major tasks of planning.
- Section III, suggested procedures for school planners using the unit.
- Section IV, a more detailed description of each major task outlined in Section II.

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I. Introduction

USE OF THE UNIT

This unit is intended for individuals or groups in a school or district faced with solving an instructional problem and interested in the potential benefits of a group planning process. While it is possible to invent an instructional program for use with the unit, it is strongly recommended that a real program for which the planners have responsibility be used instead. This should keep motivation high and make the resulting implementation plan a useful document rather than merely the outcome of a training exercise. Suggested preparations for using the unit by a planning group are:

A. A group is formed to undertake implementation planning. Ideally, it is made up of persons who have responsibility for an instructional problem or who are motivated toward a solution. The optimum size is between five and eight, which permits just about the right amount of interaction, stimulation, and participation by all members.

B. The group obtains any authorizations which may be required, finds a meeting place which is conducive to thought and discussion and equipped with a blackboard, gets a copy of the unit for each participant, in addition to felt pens, note pads, pencils, and a supply of task worksheets (see Appendix B).

C. The group selects a first meeting time and date.

D. Each participant studies the entire unit before the first session.

During the first planning session, the group selects one of its members to act as moderator or leader. The group leader should be capable of and willing to assume the responsibilities described in this unit. The leader should serve as a facilitator and assistant to the group rather than as a director or supervisor.*

Since any member of the planning group may be selected as the group leader, it is essential that all participants study the entire document prior to the first meeting so that each group member is familiar with the responsibilities of the leader as well as those of the whole group.

APPROACH

This unit assumes that schools can provide more efficient programs as well as individual growth if certain assumptions about management and people are met. At one time, management models assumed that man was intrinsically unmotivated, a belief that led to highly structured, autocratic work environments out of fear that without such control all productive activities would ultimately stop. Several years ago, McGregor (1960) observed that this hierarchical model of management was becoming less effective because of its growing distance from contemporary social trends.

If a program is to succeed, highly motivated, involved, concerned, capable people should implement it. If these characteristics are to be maintained, the working environment must promote rather than suppress human potential. Individuals should feel they are spending their lives in a meaningful, productive, self-directing manner. If educators feel they are important people doing an important job, they will communicate their attitude and their motivation to others, including the pupils. On the other hand, an educator who believes an educational program is unimportant, intrusive, or dull may bias others against the program and reduce its possible educational benefit for pupils as well as for other staff participants.

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*If the group wishes, it may choose to obtain the services of a consultant to facilitate the planning group's activities. If so, ample time should be allowed for recruitment and orientation prior to the first meeting. However, it is believed that sufficient expertise exists within school or district planning groups to provide the necessary leadership for use of this unit.

In other words, when a program does nothing more than achieve its minimal objectives, without having been a rewarding and meaningful experience for all concerned, it has fallen far short of its real potential. With a little more thought and effort, greater benefits can be accomplished for the program, for the participants, and for the school system as a whole.

In terms of time spent, the traditional hierarchical model of management devotes more time to solving problems after they have surfaced, while the participative management model allows more time to organize the system so that major problems can be anticipated and prevented. When problems do occur, they can be dealt with effectively without jeopardizing the integrity of the person or program. Savings are realized in terms of time, money, productivity, and human potential.

Human problems tend to occur when a program is introduced without professional staff involvement. People in existing systems often view any intervention as an intrusion, which is even more strongly resented when outside agencies are involved. Whether members of a system view the introduction of a program from outside agencies or from higher echelons of the district as intrusive or helpful is determined not only by the appropriateness of the program, but also, perhaps to a greater degree, by the manner in which the program is introduced. This is particularly important when externally initiated programs deal with problems that the members of a system are not only trained to deal with, but are, in fact, working on (e.g., introduction of an experimental remedial reading program in a school district which already has some form of remedial program).

This unit is based on a number of assumptions about the planning process and the nature of the intended audiences:

1. Planning is ideally a group process which, if conducted well, can result in more useful solutions than those produced by individuals.

2. Effective planning will more likely occur if planners are highly motivated and involved in the process. Therefore, the unit was designed to encourage users to identify real planning problems in their schools to work on. This permits users to develop a usable plan for a pressing problem rather than producing a hypothetical solution to a hypothetical problem.

3. Probably no one set of activities (tasks) will always be correct for the variety of problems to be solved by school staffs. However, the tasks provided in the unit are minimally essential for successful planning.

4. Participants can perform the needed tasks with only the general guidelines provided.

5. The selected leader will ensure that all members have the opportunity to contribute to the plan and that the resulting plan represents the collective view of the planners.

GOALS

This unit presents only guidelines and a process for planning the implementation of school-selected instructional programs or projects. Neither simulated material nor feedback on user's progress is provided, and therefore, claims for the unit's effectiveness in terms of increased knowledge or specific skills for individual participants are not made, even though such improvements are probable outcomes. Rather, we make only two claims that are in keeping with the unit's design and intended use:

1. Users will produce implementation plans for their programs or projects that are useful, immediately applicable, and sufficiently detailed to communicate effectively with other persons.

2. Users will regard the use of the unit as a productive and group-enhancing experience.

II. Tasks of Implementation Planning

FOCUS

The overall purpose of the Planning for Program Implementation Unit is to increase the possibility of success for instructional programs or projects by focusing on various issues that should be considered by a school staff responsible for making decisions about new programs or projects.

A convenient way to look at instructional programs in order to understand and improve them is to focus on the relationship between the basic functions of instructional planning and the decisions that must be made about them. Such a relationship between functions and decisions is shown on page 6.

This unit focuses on the second function -- planning instructional programs -- and particularly on decisions regarding the organization and use of selected experiences and resources. The issues of program design and implementation planning are strongly interactive. For example, while it is obvious that implementation planning will be affected by the proposed program, it is also true that most program designs will (or should) be affected by thinking about its implementation. Furthermore, the design of a program is highly dependent on the nature of the problem(s) to be solved and the goals and objectives selected. Therefore, this unit devotes some attention to these related issues so that implementation planning can proceed as smoothly as possible.

When unit users have completed the eighteen or so hours required (this will vary depending on the complexity of the program being considered) it is assumed that they will have a fairly complete program design and implementation plan which is immediately useful and appropriate for solving an educational problem.

Instructional Planning

Basic Functions	Types of Decisions for Functions
1. Determining Purposes of Program	1. Decisions regarding purposes of the program. a. Decisions regarding problems and needs of students, community, and society. b. Decisions regarding goals to meet those problems and needs. c. Decisions regarding objectives to be achieved in pursuing the goals.
2. Planning Instructional Programs	2. Decisions in planning programs to achieve the purposes. a. Decisions regarding what learning experiences and resources are to be included. (program design) b. Decisions regarding organization and use of the experiences and resources. (implementation planning)
3. Evaluating Instructional Programs	3. Decisions regarding evaluation of the program. a. Decisions which are both necessary and feasible about program modifications and who is to make these decisions. b. Decisions about alternative courses of action. c. Decisions about relevant information requirements for program modifications. d. Decisions concerning responsibilities and involvement in collecting, organizing and analyzing program modification information.

OUTLINE OF MAJOR TASKS

The Planning for Program Implementation Unit presents the tasks which a planning group should take into consideration as it prepares to implement a new program or project. When considering the tasks, the planning group should determine the relative importance of each task in relation to the program to be implemented. In addition, tasks that generally precede implementation planning are described briefly in order that the group may determine where it is with reference to readiness for implementation planning and take appropriate action.

Subtasks 1-12 of Task E are the major focus of the unit. Definitions of other tasks are included:

* to present a comprehensive view of the tasks associated with program planning;
* to clarify the difference between the development of an implementation plan and its actual implementation;
* to emphasize that the implementation plan and the program itself are initiated simultaneously; and
* to clarify that although program evaluation planning is an integral part of implementation planning, specific procedures are not given in this unit.

You are encouraged to study the outline for an overall view of how the unit is constructed and to refer to it during planning as a check on progress.

OUTLINE OF MAJOR PLANNING TASKS FOR PLANNING GROUP

Phase	Task
Preparatory	A. Select planning group leader.
Determine Program Purpose	B. Define problem to be addressed. C. Select program objectives.
Plan Program	D. Design (or select) a program/project to meet objectives. E. Develop implementation plan. 1. Write implementation planning group mission statement. 2. Determine personnel requirements, including preservice and inservice training. 3. Determine material, equipment, and other physical requirements. 4. Determine school readiness. 5. Plan staff selection. 6. Plan purchasing schedule. 7. Plan staff orientation. 8. Plan other orientations. 9. Determine costs. 10. Determine sequence of implementation tasks. 11. Establish timeline. 12. Arrange independent review of plan.
Plan Evaluation	F. Develop evaluation plan.
Implementation	G. Secure approval of plan and budget. H. Initiate and operate program plan. I. Conclude plans.
Evaluation	J. Evaluate program. K. Determine program future.

III. A Self Conducted, Group Approach for Planning

SUGGESTED STRUCTURE

When the planning group comes together for its first session, the members proceed through the proposed sequence of tasks and subtasks. It is estimated that the various tasks can be performed in approximately eighteen hours (depending on the complexity of the program). Three hours per session is recommended as a minimum.

First Session:	Tasks A - C
Second Session:	Task D
Third Session:	Task E, Subtasks 1-3
Fourth Session:	Task E, Subtasks 4-8
Fifth Session:	Task E, Subtasks 9-12
Sixth Session:	Tasks F - K

Following are six suggested sessions to assist you and your colleagues in becoming more effective planners and managers of your own programs. You are encouraged to adapt these procedures as much as necessary to meet the particular needs and characteristics of your group. Each session is outlined on the following pages in terms of:

* suggested tasks of the group leader;
* suggested activities for the group; and
* material to be covered.

When you and your colleagues meet for the first session, it is assumed that each has studied this unit thoroughly and will be ready to begin Task A on page 16 .

GROUP PLANNING SESSIONS

First Session

Group Leader's Responsibilities	Group Activities
	1. Perform Task A: "Select Group Leader."
2. Review with group purposes of planning group, and any previous activities, plans and agreements.	
3. Obtain consensus for an agenda and schedule for planning sessions.	
	4. Develop and agree upon agenda and schedule.
5. Lead brief discussion on contents of unit which all members have read prior to meeting. Before the group takes up each task, ask them to spend a few minutes reviewing the task descriptions. (allow 5-10 minutes) Assign one member to be responsible for recording group deliberations and final outcomes of each session.	
	6. Perform Task B: "Define Problem to be Addressed."
	7. Perform Task C: "Select Program Objectives."
8. Conclude session: lead brief discussion evaluating the session just completed; remind group of agenda and schedule of subsequent meetings and collect a copy of outcomes.	

Second Session

Group Leader's Responsibilities	Group Activities
1. Briefly review first session and proposed activities for second session.	
2. Provide copies of outcomes of first session. Ask group to individuallly review the task description.	
	3. Perform Task D: "Design or Select Program/Project to Meet Objectives."
4. Conclude session: lead brief discussion evaluating the session just completed; obtain acceptance of group for program design; remind group of agenda and subsequent meetings and collect a copy of outcomes.	

Third Session

Group Leader's Responsibilities	Group Activities
1. Briefly review second session and outlined activities for third session.	
2. Provide writing materials and copies of outcomes of first two sessions. Ask the group to individually review the subtask descriptions.	
	3. Perform Subtask 1: "Write Mission Statement."
	4. Perform Subtask 2: "Determine Personnel Requirements, etc."
	5. Perform Subtask 3: "Determine Material, Equipment, etc."
6. Conclude session: lead brief discussion evaluating the session just completed; remind group of agenda and subsequent meetings and collect a copy of the outcomes.	

Fourth Session

Group Leader's Responsibilities	Group Activities
1. Briefly review third session and proposed activities for fourth session.	
2. Provide copies of outcomes of third session. Ask the group to individually review the subtask descriptions.	
	3. Perform Subtask 4: "Determine System Readiness."
	4. Perform Subtask 5: "Plan Staff Selection."
	5. Perform Subtask 6: "Plan Purchasing Schedule."
	6. Perform Subtask 7: "Plan Staff Orientation."
	7. Perform Subtask 8: "Plan Other Orientations."
8. Conclude session: lead brief discussion evaluating the session just completed; remind group of agenda and subsequent meetings and collect a copy of the outcomes.	

Fifth Session

Group Leader's Responsibilities	Group Activities
1. Briefly review fourth session and proposed activities for fifth session.	
2. Explain the use of task work sheets (see Appendix B and subtask 10).	
3. Provide copies of outcomes of previous session. Ask group to individually review subtask descriptions.	
	4. Perform Subtask 9: "Determine Costs."
	5. Perform Subtask 10: "Determine Sequence of Task."
	6. Perform Subtask 11: "Establish Timeline."
	7. Perform Subtask 12: "Arrange for Independent Review."
8. Conclude session: lead brief discussion evaluating the session just completed; remind group of next meeting time and collect a copy of the outcomes.	

Sixth Session

Group Leader's Responsibilities	Group Activities
1. Briefly review fifth session and proposed activities for sixth session.	
2. Provide copies of outcomes of previous session. Ask group to individually review the subtask descriptions.	
	3. Perform Task F.
	4. Perform Task G.
	5. Read Task H, I, and J.
6. Lead group through a review of the completed plan, paying particular attention to possible problem areas, omitted or hastily considered parts of the plan.	
7. Conclude session: lead brief discussion in terms of the unit goals given on page 7 and help group decide on future activities.	

IV. Task Descriptions

TASK A

SELECT GROUP LEADER

The first task to be accomplished is to select the individual who will be responsible for all the subsequent tasks involved in planning for program implementation.

SELECTION CRITERIA

The planning group leader should be selected deliberately and systematically, with attention given to the ability of the candidate to carry out each of the tasks described in this unit. Whenever possible, the planning leader should also be the program or project director because a program is likely to run more smoothly if its director was involved in the planning. However, a person who is a leader in the early stages of developing a program may not necessarily have the management skills necessary to carry that program out, in which case another leader will have to be found.

Depending on the size and complexity of the program to be implemented, those responsible for selecting the group leader and probable program director should consider the following variables as they develop screening and selection criteria:

1. Magnitude of the Program. Is a full- or part-time director required? Is an assistant director required? What is the expected length of the program? What is the estimated total number of persons to be involved in the program? What type of management structure is anticipated? What degree of acceptance or opposition is anticipated between the program and the existing system? What volume of reporting is required?

2. Management Style. Is the management style of the candidate participative and known to be effective with the staff? Is the candidate "person-centered" or "thing-centered"?

3. Management Skills. What level of knowledge of budgeting, systems analysis, research and evaluation, staff development, organization development, and personal and interpersonal skills is required or desired?

4. Management Experience. What programs has the candidate directed and with what success?

5. Knowledge of System. How important to the success of the program is knowledge of the system into which the program will be introduced? Does the candidate understand the system to a sufficient degree or is he or she capable of readily acquiring this knowledge?

6. Philosophy and Values. Are the values and motivations of the candidate those which will promote the success of the program? Can the candidate be self-critical and self-monitoring?

If for any reason none of the planning group members can become the program director, selection of a leader for implementation planning should be based primarily on the ability to facilitate a participative group process and on general knowledge of the problem area being addressed. In this event, selection of a program director becomes part of subtask five of Task E (staff selection) and the criteria given above should be reviewed.

NOTE:

Ideally, the purposes for a new program or project will have been previously defined. This means that an instructional problem has been defined and goals and objectives for its solution have been stated. The functions of program planning (i.e., designing or selecting a program to solve the problem and meet the stated objectives and planning its implementation) ordinarily follow. If, however, problem definition has not been accomplished and program objectives have not been stated, planners will want to address these issues first. Therefore guidelines for performing these two tasks are given next.

TASK B

DEFINE PROBLEM TO BE ADDRESSED*

In order that planners can be certain that the program to be implemented is responding to a real problem, planners should reach consensus on the problem definition or spend the necessary time in defining the problem toward which their efforts are to be directed.

REACHING CONSENSUS

First, let's clarify what is meant here by a "problem". Since this unit (as well as others in the series) is generally directed at instructional planning, a problem is defined as a valid discrepancy between the existing state of student outcomes and the desired state of those outcomes. "Existing state" refers to the actual or present level or state of affairs and "desired state" refers to the sought after or intended level or state of affairs. The definition of a problem should specify the unsatisfactory level that exists as well as the corresponding satisfactory level.

The more explicitly the problem is defined, the more likely it is that others will understand it. Here are some suggested criteria for defining existing and desired states that should help you write clear problem definitions:

1. Specify the curricular or instructional areas involved.
2. Specify the grade levels of the students involved.
3. Specify the particular student groups involved.
4. Specify the student behaviors or other conditions involved.

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*Adapted from the training unit titled Analyzing Problems, which can be obtained from the Far West Laboratory for Educational Research and Development, 1855 Folsom Street, San Francisco, Ca. 94103. This unit is designed to develop knowledge and skills related to analyzing various potential problem areas, defining problems, collecting information concerned with validity, and determining relative seriousness of problems competing for attention.

Here is an example of a problem definition that specifies existing and desired states and meets the criteria above:

Existing State: Our district emphasizes academic preparation, even though the majority of our students do not plan on college. Instead they are concerned with job preparation. In addition, our high school students who seek jobs upon graduation are lacking in skills that would qualify them for obtaining and holding a job.

Desired State: Our non-college-bound students should receive better preparation for getting a job through career or vocational training that keeps abreast of changing manpower needs.

It is useful to remember that problem definitions can easily become either too broad ("our instructional program is not responding to student needs") or too narrow ("the Dillinger boy is a serious disciplinary problem"). The first example is so general that the problem has no starting point; the second example is not a problem for a group.

There is also a common tendency to specify solutions before defining the problem. Proposals for instructional improvements often do not make it clear what problem or problems the proposal is intended to solve. For example,

Our schools need a reduced pupil-teacher ratio.
Our schools need more money.
Our schools need differentiated staffing.
Our schools need individualized instruction.
Our schools need learning resource centers.
Our schools need SRA Reading Kits.

It is not possible to determine the merits of these proposed solutions because the problem they are meant to solve has not been specified. The important point is that once a problem has been defined well and there is general agreement that there is a valid and serious problem, several alternative solutions may be appropriate.*

In summary, the planning group should reach a consensus on the problems to be addressed that meets the suggested criteria, is about the right size for the group's attention (a subjective judgment), and should not be stated in terms of a specific solution.

If there is concern among planning group members about the validity of the problem or about its seriousness relative to other pressing problems in the school, it is recommended that group time be devoted to the Analyzing Problems training unit referred to earlier in this task.

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*Examining alternative solutions is the subject of Task D.

TASK C

SELECT PROGRAM OBJECTIVES*

THE GOAL REFINEMENT PROCESS

Goals are highly desirable, often ideal, aims that schools hope to promote, if not always achieve. They are usually stated too generally and too abstractly to provide much guidance for program designers and implementers, however. Specific goal statements can provide guidance for selecting appropriate classroom procedures for new or revised programs. How far the goal refinement process is carried depends on the nature of the goal and the philosophical stance of the persons doing the goal refinement. This unit describes four types or levels of stated outcomes: (1) pre-stated goals; (2) pre-stated goal indicators; (3) pre-stated curricular objectives; and (4) pre-stated instructional objectives.

CHARACTERISTICS OF GOAL TYPES

Pre-Stated Goals. Pre-stated goals are highly abstract statements of intent describing states of being that can usually be attained through education. For example, a goal stated at the "pre-stated goal" level is: "Every student should acquire the skill and attitudes and the knowledge required to become a good citizen." The desired state of being is "good citizen," a state to be achieved by students under conditions implicitly derived from the goal itself. While such conditions are commonly associated with the school environment, they must be experienced elsewhere.

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*Adapted from Deriving Objectives and Designing Instructional Programs training units. Both units can be obtained from the Far West Laboratory for Educational Research and Development, 1855 Folsom Street, San Francisco, Ca. 94103. Deriving Objectives presents activities designed to develop knowledge and skills in deriving objectives from goals, screening objectives through criteria and selecting a set of objectives. Designing Instructional Programs provides an overview of the process of goal refinement but focuses on selecting the characteristics of a program or project based on assumptions, intentions, and resources and constraints.

The significant characteristic of pre-stated goals is that they describe *states of being* to be attained by the student.

The level at which pre-stated goals are expressed allows instructional program designers great latitude in choosing learning experiences that can achieve those goals. Furthermore, this goal type is a source for more concrete learning outcomes.

Pre-Stated Goal Indicators. Goal indicators are long-range bahaviors or habits that give evidence that a pre-stated goal has been achieved. They are expressed more specifically than pre-stated goals, and evidence that they have been achieved, may occur long after the student has left school. An example of a goal indicator is: "Each student should demonstrate that he or she is a good citizen by promptly paying an annual income tax." This indicator must be observed after the student has worked at a job, thus fulfilling the requirement of being a "long-range behavior or habit." Further, since it is more specific than its related pre-stated goal, it appears to be an adequate example of a pre-stated goal indicator.

The critical characteristic of pre-stated goal indicators is that they describe *long-range behaviors or habits.*

The level at which pre-stated goal indicators are expressed allows instructional program designers much latitude in choosing learning experiences that can achieve them. This goal type is also a source of more concrete learning outcomes.

Pre-Stated Curricular Objectives. Curricular objectives express observable or measurable learning achievements in a particular discipline or subject area that can be demonstrated on completion of an instructional program. They are more concrete than goals and goal indicators and reflect the means to these ends. An example of a goal stated at this level is: "Each student in 12th grade Civics should be able to fill out a Form 1040 completely and accurately for purposes of filing an income tax return." This example satisfies the critical requirement for an adequate curricular objective: it states an observable or measurable student learning achievement that can be demonstrated on completion of an instructional program in a certain discipline. Also, it is more concretely stated than a goal or goal indicator and reflects one means necessary for achieving its related goal and goal indicator.

The critical characteristics of pre-stated curricular objectives are that they prescribe:

1. *disciplines or subject areas in which stated achievements should occur;*
2. *observable or measurable end-of-program learning achievements or behaviors.*

The level at which pre-stated curricular objectives are expressed allows instructional program designers some latitude in choosing learning experiences that can achieve them. Curricular objectives are also a source for more concrete learning outcomes.

Pre-Stated Instructional Objectives. Instructional objectives state specifically what the student is to know, be able to do, or to demonstrate as a result of exposure to a particular segment of an instructional program. They include the most significant conditions under which he or she will perform, such as the space, setting, and materials involved, as well as the level of acceptable student performance. Unlike the other goal types, therefore, instructional objectives have built-in evaluation criteria and standards that serves as guides for testing each specific bit of knowledge, skill, and performance being demonstrated by the student. An example at this level is: "By the end of the fifth week in 10th grade Social Studies, given sample forms and tax tables and appropriate financial data, the student will be able to calculate the tax due or refundable for a hypothetical single citizen, and a married couple with four children, within two hours and to the satisfaction of the teacher." A quick review of the above definition should show that this example is an adequate pre-stated instructional objective.

The critical characteristics of pre-stated instructional objectives are that they specify:

1. *levels of acceptable student performance,*
2. *precise time frames within programs in which stated behaviors are to occur,*
3. *conditions under which students will perform (e.g., space, setting, and materials), and*
4. *particular knowledge, skill, or performance that is to be taught and tested.*

The level at which instructional objectives are stated allows program designers little latitude in choosing learning experiences or evaluation procedures. This type of goal is also capable of corresponding directly to specific instructional program design options and, as such, is the most concrete level at which instructional goals may be stated.

GOALS AND GUIDANCE

As stated earlier, the goal refinement process provides guidance for staff in designing instructional programs. The type of student learning goals that school people chose has several important implications for staff assigned to designing and teaching courses or programs. The more specifically stated student learning goals are, the more direction teachers have for designing or selecting learning experiences, and the more staff planning time is required prior to beginning instruction. Naturally the less time staff devotes to specifying goals at various levels prior to instruction, the less guidance they will receive from learning goals.

The number of people who can participate in instructional planning depends on how concretely learning goals are to be stated. When no student learning goals are specified by staff prior to instruction, it is assumed that students are capable of serving as the primary, or at least, mutual planners of their instructional programs. In cases where broad instructional goals are to be stated, parents and community representatives, as well as students and teachers, can usually participate in instructional planning. Where specific curricular or instructional objectives are desired, a trained staff and coordinator of activities should probably formulate them.

The appropriate selection of particular instructional program design options also depends on the type of learning goals pursued. Deciding how precisely to specify instructional goals should not be based only on how much time the staff has to devote to the task or how much direction it needs. The decision should also be based on the kind of program that is desired. In other words, some program design options lend themselves better than others to putting some types of learning goals into practice.

At the pre-stated curricular objective level of goal refinement, the amount of guidance provided designers and the amount of flexibility in a proposed program strike a happy medium. Curricular objectives indicate student behavior that acts as the basis for evaluating learner achievement. Yet they do not prescribe how this behavior is to be learned or tested. Local schools and individual teachers can translate these objectives into a course or program, or they may elect to refine them into even more concrete pre-stated instructional objectives before matching them, in turn, with a course or program. A program outlined by the boundaries set by curricular objectives is likely to differ from one matched with instructional objectives. Instructional objectives are so prescriptive that they limit the number of programs that can be matched with them.

Matching programs with goals, then, is highly dependent on the level of goal refinement chosen by particular staffs. If more latitude and less guidance are desired in the matching process, then the curricular objective level is usually where goals and programs should be matched. If staff has much time and expertise and wants highly prescriptive programs, then the guidance provided by pre-stated instructional objectives might be the best choice.

A FINAL WORD ON GOAL REFINEMENT

It is possible that an instructional program may have no pre-determined goals. In such a case, the purposes of learning activities and experiences are not specified in advance. Rather, they evolve as the student carries out or participates in activities, synthesizing earlier knowledge with newly discovered facts, principles, and concepts. In such a case there is little reason to formally design an instructional program. This approach to education is common among "free" or "open" schools.

However, when groups of teachers, administrators, students, or others outline instructional programs, they usually need to establish some boundaries to their design. When consensus is required on the conduct of instruction, it is almost always necessary to establish ahead of time what the ends and means of teaching and learning will be. Therefore, instructional goals come in handy for resolving early differences of opinion about certain aspects of the educational process, as well as providing guidance for sorting through the "nuts and bolts"—the particular activities to be used—in the teaching/learning process.

SELECTING OBJECTIVES

A convenient and workable level for formulating most instructional programs or projects is the curricular objective level. This level allows program designers and implementers sufficient latitude and flexibility in considering program design categories and provides sufficient guidance for developing evaluation procedures. For example, consider the following instructional design categories:

1. teaching/learning method
2. teacher role
3. student role
4. physical setting
5. evaluation

The design of an instructional program should describe the intended nature of each of the categories. A set of curricular objectives provides about the right amount of guidance for outlining an instructional program.

How does one know whether a set of curricular objectives is appropriate? There are several factors to consider.

1. Are they relevant? (I.e., Have they been logically derived from goals? Are they relevant to student needs and interests?)
2. Are they feasible in terms of the intended audience? (E.g., Are they reasonable given the student population? Does the school have the required resources?)
3. Do they provide sufficient guidance to those who must implement them?

These three criteria can be used with each objective that has been stated. But there is one more factor to consider - objectives ought to be classified in terms of their stated behaviors. While there are several ways to classify student behavior and types of outcomes, perhaps the best known are the taxonomies of Bloom and Krathwohl. There are difficulties in using any taxonomy or classification system, but they are useful in identifying types of objectives that have been selected, and an examination of the types will show that specific teaching/learning methods can be derived. Condensed versions of Bloom's cognitive taxonomy are given on pages 30 and 31.

Krathwohl's efforts in the affective domain produced the following:

CONDENSED AFFECTIVE TAXONOMY*

RECEIVING:	Students pay attention, and are willing to listen and look.
RESPONDING:	Students are willing to comply with regulations, are actively interested, and enjoy participation.
VALUING:	Students attach worth to an activity, assume active responsibility and demonstrate a stable commitment to the activity or belief.
ORGANIZATION:	Students form judgments about new values and organize them into a priority system.
CHARACTERIZATION:	Students selectively and consistently respond to a variety of stimuli according to a value system, are willing to revise judgments in light of evidence, are willing to judge problems in terms of situations, issues, and consequences rather than in terms of fixed, dogmatic precepts or wishful thinking.

Once behaviors and types of achievement are classified according to taxonomies such as those mentioned above, the most representative behaviors or achievements in a set of learning goals then serve as the basis for a starting point in the matching process. The starting point is usually the teaching/learning method and once a decision about what it is to be has been made this first choice affects the choices of subsequent design categories and options.

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*David R. Krathwchl, et al., *Taxonomy of Educational Objectives; Handbook II: Affective Domain.* (New York: David McKay, 1964).

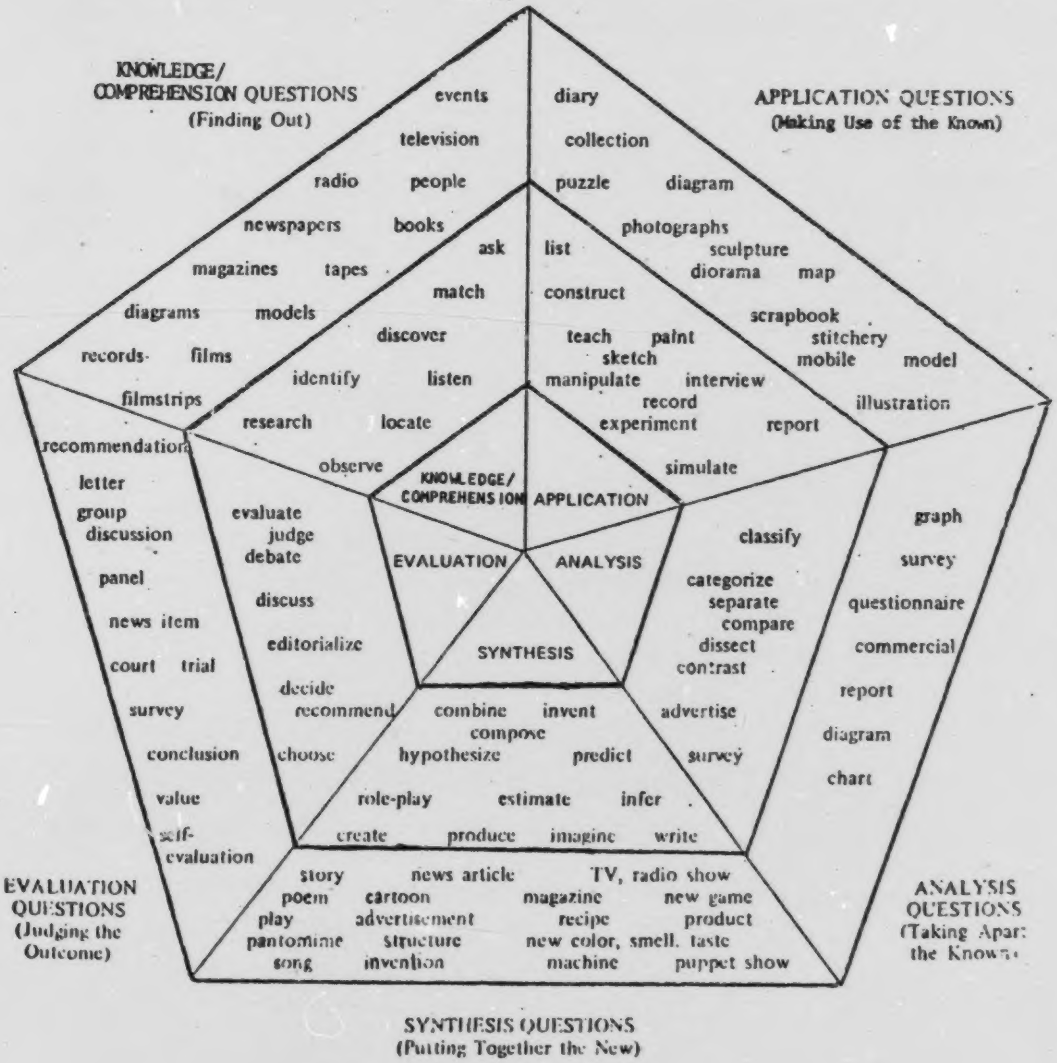
BLOOM'S TAXONOMY OF COGNITIVE OBJECTIVES

(Examples of Student and Teacher Action)

AREA OF TAXONOMY	DEFINITION	WHAT TEACHER DOES	WHAT STUDENT DOES
KNOWLEDGE	RECALLING OF SPECIFIC BITS OF INFORMATION.	DIRECTS TELLS SHOWS EXAMINES	RESPONDS ABSORBS REMEMBERS RECOGNIZES
COMPREHENSION	UNDERSTANDING OF A COMMUNICATED MATERIAL WITHOUT RELATING IT TO OTHER MATERIAL.	DEMONSTRATES LISTENS QUESTIONS COMPARES CONTRASTS EXAMINES	EXPLAINS TRANSLATES DEMONSTRATES INTERPRETS
APPLICATION	USING METHODS, CONCEPTS, PRINCIPLES, AND THEORIES IN NEW SITUATIONS.	SHOWS FACILITATES OBSERVES CRITICIZES	SOLVES NOVEL PROBLEMS, DEMONSTRATES USE OF KNOWLEDGE, CONSTRUCTS
ANALYSIS	BREAKING DOWN A COMMUNICATION INTO ITS CONSTITUENT ELEMENTS.	PROBES GUIDES OBSERVES, ACTS AS A RESOURCE	DISCUSSES UNCOVERS LISTS DISSECTS
SYNTHESIS	PUTTING TOGETHER CONSTITUENT ELEMENTS OR PARTS TO FORM A WHOLE	REFLECTS EXTENDS ANALYZES EVALUATES	DISCUSSES GENERALIZES RELATES COMPARES CONTRASTS ABSTRACTS
EVALUATION	JUDGING THE VALUE OF MATERIALS AND METHODS GIVEN PURPOSES, APPLYING STANDARDS AND CRITERIA.	ACCEPTS, LAYS BARE CRITERIA, HARMONIZES	JUDGES DISPUTES

BLOOM'S TAXONOMY OF COGNITIVE OBJECTIVES

(Process and Output Examples)


KNOWLEDGE/ COMPREHENSION QUESTIONS (Finding Out)
events
television
radio
people
newspapers
books
magazines
tapes
diagrams
models
records
films
filmstrips
ask
match
discover
identify
listen
research
locate
observe
APPLICATION QUESTIONS (Making Use of the Known)
diary
collection
puzzle
diagram
photographs
sculpture
diorama
map
scrapbook
stitchery
mobile
model
illustration
list
construct
teach
paint
sketch
manipulate
interview
record
experiment
report
simulate
KNOWLEDGE/ COMPREHENSION
APPLICATION
EVALUATION
ANALYSIS
SYNTHESIS
recommendation
letter
group discussion
panel
news item
court
trial
survey
conclusion
value
self-evaluation
evaluate
judge
debate
discuss
editorialize
decide
recommend
choose
classify
categorize
separate
compare
dissect
contrast
advertise
survey
graph
survey
questionnaire
commercial
report
diagram
chart
combine
invent
compose
hypothesize
predict
role-play
estimate
infer
create
produce
imagine
write
story
news article
TV, radio show
poem
cartoon
magazine
new game
play
advertisement
recipe
product
pantomime
structure
new color, smell, taste
song
invention
machine
puppet show
EVALUATION QUESTIONS (Judging the Outcome)
ANALYSIS QUESTIONS (Taking Apar the Know
SYNTHESIS QUESTIONS (Putting Together the New)

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The rationale for classifying learning goals according to their stated types of behavior and matching those behaviors with a corresponding teaching/learning method or methods is as follows:

1. Usually the first thing one considers in program design is what students should achieve as a result of particular learning experiences--the "what" of a program--or its "Intended Results of Instruction" stated in terms of goals or objectives.

2. These specific outcomes then must be looked at in terms of "how" they will be put across to the student. Though other things must be considered when designing programs, such as teacher and student functions, and available staff and equipment resources, the design category that gives the most guidance for outlining a program is the "teaching/learning method" by which the "what" of programs can be communicated to students.

3. When teaching/learning methods are selected, then other critical program design categories can be addressed. For example, evaluation methods can be selected based on earlier selection of the "what"--goals and objectives--and the "how," or the methods used to effect them. Although dimensions such as content scope and organization are important to determine early in the program design, they are generally implied in sets of learning objectives, by the teaching/learning method, or prescribed by some mix of the two. The guidance provided designers by an early selection of a teaching/learning method aids in the further choice of important, yet less critical, options in program design.

If objectives for your program or project have not been developed, the planning group will want to take time to do so. If the somewhat brief overview of the process is insufficient to assist you in selecting a set of appropriate objectives, either of the two training units referred to on page 22 will be useful.

In summary, the process of selecting and/or agreeing on a set of objectives includes the following:

1. *Select or write curricular objectives for your program or project.*

2. *Screen each objective to determine whether it:*

    a. *is relevant;*

    b. *is feasible;*

    c. *provides sufficient guidance.*

3. *Screen the set of objectives in terms of their stated behaviors and their cognitive and/or affective classification. Is there about the right amount of cognitive level representative?*

4. *Screen the set in terms of feasibility. Are there too many objectives or not enough? Do they adequately reflect all goals?*

TASK D

DESIGN OR SELECT A PROGRAM OR PROJECT*

Once the objectives for an instructional program have been selected and consensus achieved, designing a program becomes an essential next step. A design informs others *how* the school is to accomplish the objectives. This section presents the basic categories about which decisions are made concerning the program design. The categories are primarily selected for use with instructional program design; for projects that may be only peripherally related to instruction, school planners should revise or improvise more appropriate categories. The categories and representative characteristics are:

1. INTENDED RESULT OF INSTRUCTION

Replicative Skills
Techniques for knowledge accumulation, or specific cognitive skills such as adding and spelling. Replicative skills rely on memory.

Psychomotor Skills
Motor, or movement, skills acquired through repetition. The distinguishing feature of psychomotor skills is the development of muscle movement which, once learned, does not involve thinking through the operation to be performed. Examples of psychomotor skills are typing and shoelace tying.

Problem Solving Skills
Usually these techniques entail a systematic investigation which follows definite steps that reveal solutions.

Inventive Skills
Capability for designing, developing, and creating.

Affective Skills
Affective skills include student development and sensitivity to feelings and emotions. Attitude and appreciation are usually included in the affective domain.

No Pre-Determined Result
Students and/or the teacher determine the intended results as work progress No learning objectives are specified the outset, even though the curriculu might be structured.

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*Adapted from *Designing Instructional Programs* training unit. Available from Far West Laboratory for Educational Research and Development, 1855 Folsom St., San Francisco, CA 94103.

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2. CONTENT SCOPE

Single Subject

Curricula which limit the subject matter to a single area or discipline, such as mathematics.

Interdisciplinary

Curricula, such as the humanities, which draw from different disciplines or subject areas.

3. CONTENT ORGANIZATION

Inductive

A course of study which leads the student from the simple to complex, progressing from specific facts to general principles. "The act, process, result, or an instance of reasoning from a part to a whole, from particulars to generals, or from the individual to the universal." (Webster's Seventh New Collegiate Dictionary, Springfield, Mass.: G. & C. Merriam, 1969).

Deductive

A course of study which presents general principles, laws, and rules before proceeding to specific applications or facts. The course moves from the general or abstract to the specific or concrete.

Thematic

A course which is organized around a general topic or topics. The focus is on unified concepts or phenomena rather than skill attainment. (For example, a course on "Transportation.")

Chronological

Usually this type of curricular organization proceeds from past to present, and sometimes includes predictions for the future. However, a course may begin with present events and gradually work backwards.

No Pre-Determined Organization

The content sequence is not present, but continually evolves.

4. TEACHER FUNCTION

Information Purveyor

The teacher is the primary source of information in class, and the majority of his or her time is spent conveying this information to students.

Diagnostician/Prescriber

The diagnostician/prescriber attempts to pinpoint each student's learning difficulty, usually through empirical observation and testing. After diagnosis, the teacher prescribes the appropriate learning "remedy" to alleviate the student's problem. (Learning needs are assumed to be "deficiencies in knowledge and skills.")

Resource Person

The function of the resource person is to be helpful, supportive, available and knowledgeable rather than directive or judgmental. The teacher is available to assist the student and to provide just one of many reference sources he might consult. The teacher is assumed to have a fundamental grasp of the subject(s) undertaken by the student for investigation and study.

Fellow Learner

In some cases the teacher may assume the role of fellow learner in a group of students. The study group determines the aims, direction and learning activities. The teacher is assumed to have no more knowledge than the members of the group, and at times might be a peer who is chosen to be in charge of the class.

4. TEACHER FUNCTION (continued)

Contractor

Traditionally teachers "assign" work to students, but in contracting, the student and teacher "negotiate." In a true contract, both parties have the right to accept or reject the terms in the contract. Once the agreement is finalized, both parties are bound by a written or oral agreement. In his contract the student usually agrees to complete a certain job, often within a specified time, with conditions for quality, etc. Some teachers choose to "ease into" true contracting by giving the student a choice among alternative assignments.

No Teaching Function

In some cases a teacher performs only monitoring or administrative duties; in others, there may be no teacher present.

5. STUDENT FUNCTION

Listener/Follower

The student follows specific teacher directions as to which learning activities he should engage in and which methods he should follow.

Mutual Planner/Performer

The student assumes equal responsibility with the teacher in planning and revising his course of study and the learning activities he will undertake. In coursework the teacher guides and assists the learner, but students have the option to alter the direction and method of their study.

Primary Planner/Performer

The student determines his own course of study and learning activities, relying on the teacher for occasional assistance and guidance. The student uses the teacher as merely one aid in the learning process.

Fellow Learner

Several students work as a group on a given project. They determine their own direction and methods without guidance from the teacher. If the teacher is a member of the group, he is assumed to have no more knowledge than the other students.

Self-Instructor

The student acts alone in planning his course of study and learning activities.

6 . TEACHING/LEARNING METHOD

Lecture/Demonstration

In the lecture method of teaching, the teacher delivers an oral synthesis of a given topic. Students are expected to understand and remember the most important points of each lecture. A demonstration may be as simple as an oral presentation with concrete objects as examples, or as complex as an entire exhibit of completed projects accompanied by an oral explanation.

Memorization

Memorization itself is a process which requires the student to be able to recall certain facts, vocabulary, rules, or other bits of information on demand. Although the technique of memorization requires no understanding of the material to be learned, students are normally expected to understand what they commit to memory.

Programmed Instruction

Programmed learning is a method in which the material to be learned is broken down into a series of small steps, each one of which presents a single problem for solution. (Example: discrimination between "pot" and "pat" in a reading sequence.) A program must be sequenced; it must be cumulative, and the steps small enough so that 85% of the students in the class succeed at each step; each student must receive immediate feedback as to his or her success at each step. The programmed method is used by individual students (rather than by groups) and requires little input from the teacher.

Laboratory/Practical Experience

Students learn through direct contact with materials and problems, either within a laboratory or in a real-life situation.

Discussion/Seminar

In a discussion, students and teachers exchange ideas on a given topic. In most cases the teacher makes some effort to give direction to the discussion. In a seminar, advanced students present specifically prepared reports on given topics to a small group, providing the basis for subsequent discussion.

Research/Synthesis

Research implies seeking information to find out what is already known on a given topic, testing new ideas within a specified framework, or exploring new areas with no boundaries marked. In preparing research reports, students are obliged to synthesize (summarize and condense) information they have gathered, thus helping them acquire interpretive skills.

Discovery/Inquiry

This method is composed of two different techniques, but the terms are sometimes used interchangeably since there is a great similarity between them, and their distinction is clear only in the natural and social sciences. The discovery process is not the actual discovery of new knowledge. Rather, it is a means for allowing students to experience the excitement of discovery themselves. Students might "discover" well-known facts or principles, but they arrive at their realization after a series of learning steps geared to lead them to the discovery without revealing the eventual conclusion. The inquiry process also requires the teacher to guide students through certain steps. However, the eventual goal is not to have students "discover" anything, but simply to develop their abilities to ask better questions. It is assumed that students who have gained the ability to ask appropriate questions will be able to use that ability to solve their own problems in the future, and to gain knowledge they might wish to acquire.

7. STUDENT GROUPING: BY GRADE

Single Grade
Classes are composed of students at only one grade level, most of whom are also the same age.

Multi-Grade/Non-Graded
In multi-grade grouping, a student "belongs" to a certain grade because of his age, but participates in learning activities with students from other grades. In non-graded grouping, classes are composed of students of different ages, with no grade level distinctions made.

8. STUDENT GROUPING: BY STUDENT CHARACTERISTICS

By Previous Courses Taken
Frequently there are no requirements for admission to a course other than completion of certain prerequisite courses.

By Achievement (beginning skills, advanced skills, etc.)
Students are grouped according to demonstrated skill level rather than assumed ability. Grouping on this basis requires frequent individual assessment to determine appropriate group assignments.

By Age
Grouping by age is usually the same as grouping by grade. However, in some instances age is the sole criterion for grouping. Admission to certain driver education courses, for example, depends on the student's age rather than his grade level.

By Ability(slow learners, gifted, etc.)
Students are grouped with others of the same ability. Proponents claim that high ability students working together can accomplish more if not held back by slower students, and that slow students often tend to be discouraged when competing with rapid learners.

Heterogeneous Grouping (mixed)
Classes are composed of students with different ages, interests, and learning needs and abilities. Heterogeneous grouping results in classes which are cross sections of the school population. Proponents of heterogeneous grouping point out that it allows the more advanced student to provide incentive and support for the slower learners.

By Sex
In this method of grouping the assumption is that students feel more comfortable and are less distracted in groups or classes with their own sex. Traditionally some classes have been grouped by sex (physical education, for example) to allow for strength differences. Other classes have been grouped by sex to allow for intensive discussion of personal student problems.

By Interest
Groups within classes, occasionally entire schools, are organized around different student interests. Sometimes these groups are called "unique talent" groups to indicate a special student interest, combined with extra ability, in a given field. The assumption is that the special field can be thoroughly explored and interest groups can capitalize on students enthusiasm which may facilitate learning in other areas.

9. STUDENT GROUPING: BY SIZE

The size of student groups varies widely. The following group sizes have been arbitrarily specified:

- *Individual students*
- *Small Group, 2-10 students*
- *Medium Group, 11-30 students*
- *Large Group, 31-50 students*
- *Mass Group, 51 or more*
- *Various Sizes at One Time*

10. TEACHER SPECIALIZATION

Subject-Matter Specialists
Teachers who have extensive or intensive knowledge in a given subject area.

Generalists
Teachers who have general knowledge in more than one subject area, and who do not claim a specialty.

11. CLASSROOM STAFF

Independent Teacher/Planner
A teacher who bears the entire responsibility for planning and teaching one or more classes.

Team Teacher/Planner
A group of teachers who share planning and teaching functions. Team may be composed of either generalists or specialists.

Teacher and Aides/Paraprofessionals
Non-certificated personnel assist the teacher in performing either administrative tasks or actual teaching functions. The assumption is that use of other personnel for administrative tasks allows the teacher to concentrate on "teaching functions." When the aides are used to assist in teaching, the assumption is that more students can get individual attention. Aides may be paid or volunteer.

Series of Teachers
A group of teachers not employed by the school, but who are brought in as "guest speakers" in a particular sequence to augment or supplement regular teaching.

No "Teacher"
In some instances there may be no teacher. If present, the teacher performs only monitoring and administrative tasks, rather than dealing with the subject matter or assisting student learning.

12. MATERIALS

Standard Texts and Workbooks

Standard textbooks are assumed to contain the bulk of the information students are expected to learn in a given course or unit of study. When dispensing information is the aim of a course, the use of textbooks can provide the necessary base information for students planning advanced coursework in the same or related fields. Workbooks provide supplementary exercises for students. The exercises, which are normally related to the textbook material, are usually written. In some curricula, however, a workbook but no standard text may be required.

Selected Reading

Readings include published, or sometimes unpublished, materials which may be assigned in place of a standard text. In some courses a reading list is provided for optional reading.

Programmed Materials

Programmed materials are designed for use only with "Programmed Methods of Instruction." They may be prepared for a variety of media, including printed workbooks, computers, etc.

Educational Games

Educational games are activities which may include such elements as role-playing, competition, chance, or structured responses. Usually, the game format is used to increase the motivation of students as well as to teach required information in a relatively "painless" manner. In educational games, decision-making is usually the primary focus and the element of change is minimized.

A-V Materials

Audio-Visual materials include photographs, films, filmstrips, transparencies, records, audiotapes and cassettes, videotapes, and other non-print "software," but exclude the equipment on which the materials are projected or played.

Specialized Materials (e.g., art, science, industrial materials)

All supplies and materials other than books, audio-visual materials, paper and other stationery supplies fall into this category. Supplies for science, art, industrial courses, shop, and home economics are included. The term does not encompass equipment and hardware.

Teacher/Student Prepared Materials

Unpublished teaching materials prepared by teachers and/or students for use in the course of study.

No Materials

Self-explanatory.

13. EQUIPMENT

Small Hardware (e.g., projectors, tape recorders)
Playback equipment which is small enough to be portable. Such equipment is often necessary to view, or otherwise monitor, A-V materials.

Large Hardware (e.g., language labs, teaching machines, etc.)
Playback or production equipment which requires permanent installation and occasionally some structural modification to buildings. Usually such equipment requires a large initital expenditure of funds.

Specialized Equipment (e.g., art, science)
The term "specialized" refers to hardware which is intended for one particular course, or subject matter area, and which is not applicable for other courses or areas. Forges, lathes, kilns, stoves, sewing machines, etc., would fall into this category.

No-Extra Equipment
Self-explanatory.

14. PHYSICAL SETTING

Single Classroom (fixed furniture)
Traditional classroom with furniture (usually desks and seats)bolted to the floor.

Single Classroom (movable furniture)
A classroom equipped with furniture which can be rearranged according to the needs of the moment.

Open-Space Classroom (movable furniture/walls)
A room, the size and arrangement of which can be changed according to the needs of the moment. Walls are usually movable partitions (e.g., folding doors). Furniture is usually lightweight.

Library
School, public, or private library.

Study Carrels
Individual desks which have a front and/or side partition and a shelf for books. Carrels are designed to provide privacy and prevent distraction.

Other In-School Locations (lab, shop, gym)
A general term used to encompass instructional settings which are not traditional classrooms, libraries, or study carrels. In these settings, students normally work with concrete materials.

Industry/Outside School Area
This category encompasses all instructional settings which are not part of the school grounds and buildings.

15. STUDENT EVALUATION: METHOD

Written Exam
Self-explanatory

Oral Exam
Self-explanatory

Practical Exam
A student is evaluated on how well he or she performs with equipment or materials. For example, in a science experiment, a test of physical endurance or proficiency, a musical score, an operation with a piece of industrial equipment, etc., his or her performance is measured in relation to what he or she has studied, practiced, or created.

Class Attendance (no exam)
Self-explanatory

Teacher Perception of Progress (no exam)
Self-explanatory

Student Perception of Progress (no exam)
Self-explanatory

Teacher/Student Perception of Progress (no exam)
Self-explanatory

No Evaluation
Self-explanatory

16. STUDENT EVALUATION: TYPE OF COMPARISON

Standardized Norm
Students' scores are compared with other students' achievement from many geographic areas on the same test. The standardized norm, which is used as the basis for comparison, is derived from results of testing a great many students of different abilities in a given subject.

Class Norm
Student test scores and other measures of achievement or performance (such as amount of class participation) are compared with those of members of the same class. A norm is determined for the class so that each student's score can be evaluated in relation to that norm.

Small Group Norm
Student test scores, and other measures of achievement and performance, are compared with those of members of his or her own small study group for which a norm is determined.

Pre-determined Achievement Level (behavioral objectives)
A student's achievement is measured against specific objectives established for a given course or unit of work. (A behavioral objective states specifically what is to be learned, how mastery is to be observed and measured, and the standard of achievement to be reached.) Evaluation involves comparing student performance to these pre-determined standards.

Student's Previous Performance
A student's level of achievement is assessed at the beginning of the course. His subsequent progress is measured and evaluated against that level.

No Comparison Made
No evaluation

17. STUDENT EVALUATION: TEST DEVELOPER

Standardized Tests
Standardized tests are developed by testing a large sample of students and establishing a distribution of their scores. All testing is conducted under controlled conditions. Norms are then constructed to permit comparisons of other student scores with performance of the larger sample.

Curriculum Developer/Publisher
Many curricular materials are accompanied by tests especially prepared by the authors or an editorial staff. In some cases, the publisher indicates the achievement levels that students are expected to attain on the various tests.

Teacher
Tests prepared by one or more teachers and usually administered by a classroom teacher. Teacher-made tests usually take into consideration the characteristics of the classes and students for which they are prepared.

Student
Tests prepared by an individual student, a class, or a larger group. It is assumed that the students are able to set appropriate evaluative criteria for their own achievement.

Teacher/Student
The teacher and student work together to design a test and set evaluative criteria.

No Tests
Self-explanatory

The task of your planning group is to design the intended program or project by selecting what, in its view, is the most appropriate characteristic(s) from each of the categories. The selections will be based on a number of variables, including the program objectives, your group's assumptions about learners and the learning process, and its immediate knowledge of what is possible in its school or district. Remember that your group's initial selections will have an effect on later category considerations.

When you have completed this task, the initial problem definition and the program objectives will have been translated into a program design that is communicable to others.

An example of a comprehensive program design which also includes values, assumptions, goals, and objectives is presented in Appendix A.

TASK E

DEVELOP IMPLEMENTATION PLAN

Task E is the heart of this unit. It presents the various tasks which a planning group should consider as they prepare to implement a new program or project. Your group will be making decisions regarding the organization and use of the program design and school resources. While each of you has probably thought about many of the issues of implementation planning during program design, the issues will now have to be considered in detail in order that (1) the program has a good chance of success and (2) potential problems can be anticipated and taken into account.

As the group proceeds through the subtasks associated with implementation planning, the issues considered, decisions made, and specific plans agreed upon should be recorded so that a document will result that contains not only previous work (i.e., a problem definition, statement of objectives, a program design) but also provides a "blueprint" for action. Task E consists of twelve planning subtasks which the group should consider.

SUBTASK 1

WRITE IMPLEMENTATION PLANNING MISSION STATEMENT

The primary purpose of writing the mission statement is to achieve a common understanding between implementation planners of the job confronting them. When you have completed this subtask such a statement should have been produced.

DEFINITION

The mission statement is a relatively brief description of the job to be accomplished by implementation planners. It should specify:

1. The name of the instructional program or projects for which implementation planning is to be conducted and where in the organizational structure of the district or school the program will fit.
2. The date for actual program initiation.
3. The location, grade levels, classes, number of students, etc. for the program that is to be implemented.
4. Any major restrictions or requirements that might impinge on program implementation, such as district guidelines, the instructional program design itself, existing resources, or funding limitations.

PROCEDURES

The mission statement is derived from the program to be implemented. Generally the first step taken is to review the program design for specific details that will aid in writing the mission statement. It is possible to develop a program design simultaneously while dealing with implementation planning issues, and certainly a well-designed instructional program may have already considered several implementation issues. However, it is strongly recommended that the nature of the desired program to be implemented be thought through and described prior to detailed planning for its implementation.

Assuming that the program design is available and has been reviewed, the implementation planning group is ready to write the mission statement by describing briefly what it is they wish to accomplish. For example:

> *"to prepare an implementation plan for the installation of the selected career education program for the 1975-76 school year. The program will be introduced on a pilot basis for approximately 120 tenth-, eleventh-, and twelfth-grade students at Futures High School. The program will be a total alternative for the selected students and will operate in accordance with guidelines relative to district-policy (e.g., teacher-student ratio, per-pupil expenditure, evaluation requirements, etc.). Students selected will be from a pool of volunteers. The program will be administered by the Futures High School principal."*

Note that the actual scope of the program to be implemented requires careful consideration. For example, the number of students that can be adequately handled during the first year of a program, the amount and kind of learning resources available, etc., will help determine the scope of the program. For complex programs, school staffs need to consider whether they wish to implement the entire program with a few students at first and gradually increase the number, or implement only a few components of the program for a larger number of students and gradually move toward the total program.

In summary, the mission statement serves as an objective for implementation planners and an introduction to the implementation plan they will develop.

NOTE:

Completion of the next eleven tasks is considered minimal for implementation of most instructional programs. They will vary widely in importance depending on the size and complexity of the program under consideration. They are closely interrelated and in the planning of small programs may be considered simultaneously. A careful analysis of program requirements according to subtasks 2 through 12 should produce a list of activities which should be performed if the implementation of the program is to be successful.

It may be helpful, though not essential, to consider the costs associated with each implementation task as it is generated. Determining implementation costs will be dealt with further in subtask 9.

A difficulty in generating tasks which lead to the achievement of a mission statement lies in distinguishing tasks from subtasks Subtasks must be accomplished before a task can be finished. What may be a necessary task in one implementation plan may be a subtask in another.

Although there appears to be no simple and immediate way to determine the difference between tasks and subtasks for a given implementation plan, the following considerations may be helpful:

1. What basically must be done before each part of the program implementation plan can be completed?
2. Can any of the initially generated tasks be logically subsumed under another task?

3. Can the goals and/or objectives of the educational program be reached only by the listed tasks?

Try to avoid getting bogged down in writing all the necessary subtasks for each task as it is generated before all the major tasks have been spelled out. It may be helpful first to write what initially appears to be a task and list any immediate ideas about relevant subtasks beneath it. After all the tasks initially agreed upon have been listed, the reconsideration of tasks and generation of additional subtasks can proceed.

SUBTASK 2

DETERMINE PERSONNEL REQUIREMENTS, INCLUDING PRESERVICE AND INSERVICE TRAINING NEEDS

This task involves determining the various skills required to implement the program, assessing the available staff's capability to provide the required skills, and identifying additional staffing needs, as well as staff training programs necessary to meet these requirements.

TASK ANALYSIS

Staffing requirements may be determined through a careful analysis of the program design. This analysis should focus on the following questions with regard to each task:

1. What has to be done?
2. What professional, technical, and human relation skills are required?
3. How much time will it take?
4. What types of supporting personnel (administrative, clerical, consultant) are required?

After each task has been analyzed in this manner, a master list of personnel required for the program can be compiled. This analysis will also provide sufficient information on the qualifications required for each position so that preliminary job descriptions and budget estimates can be made. Final job descriptions and budget figures will be determined in subtasks 5 and 9, respectively.

For example, you may determine from your analysis of the program design that skills required include counseling, teaching, writing, and community relations. Whatever the identified skills, you can then estimate the number of persons who will be needed. Further, if the planning group leader, for whatever reasons, will be unable to serve as program or project director, this position needs to be considered as well.

In some programs, staff development personnel will be hired as consultants rather than permanent staff members. Consultant time will decrease as the program progresses.

Hiring an evaluation consultant should be considered at this point. The worth of the program can be neither proved nor improved unless effective evaluation is an integral part of it. However, in large projects especially, even before outside consultant services are considered, one person in the planning group should be responsible for evaluation. This person can begin to anticipate the form that program evaluation must take and can assist the director by performing a monitoring function during all phases of the program. Outside consultation on evaluation, if required, should be contracted as early in the process as the budget permits. The earlier in the process this expertise is available, the more effective and useful the evaluation will become to the total program.

If the analysis of personnel requirements has been done with care, the personnel requirements list will rarely yield full-time equivalents (FTE) in terms of integral numbers. For example, the program may require 1.0 FTE librarian, 0.2 FTE accountant, 2.6 FTE secretaries, 6.5 FTE reading aides, etc. Since personnel expenses are generally far greater than all other program expenses combined, no more personnel than are actually required should be hired. High quality part-time services may be obtained either through special contracts or from the growing number of qualified persons who desire part-time, rather than full-time, employment. It may also be possible to share personnel with other programs operating in the school system.

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PRESERVICE AND INSERVICE TRAINING NEEDS

This unit assumes that the director will manage the program in a participative rather than an autocratic manner. The director becomes, in effect, the chief inservice trainer. From the beginning to the end of the program, the director should strive to teach by example the principles of participative management, mutual respect, trust and honesty, effective problem solving and decision making, and effective interpersonal and intergroup relations. The entire program may be considered an inservice training experience whereby staff members grow personally and professionally, and at the same time contribute more effectively to the success of the program.

In addition, there are other preservice and inservice requirements which must be specified in the implementation plan. To determine these requirements:

1. examine the qualifications desired in each proposed staff member in terms of knowledge, skills, and interpersonal effectiveness;
2. compare these desired qualifications with the qualifications of persons who are actually available to fill the positions; and
3. identify in which areas discrepancies exist.

Any discrepancies discovered tentatively determine the types of preservice and inservice training programs to be included in the implementation plan. For example, consider the program design in Appendix A. The teacher role was described as responsible for guiding and assisting students in planning, achieving, and evaluating accomplishment; and to direct students to useful resources for learning. Thus the teacher role was described as requiring the skills of a resource person, a contractor, and diagnostician/prescriber. A staff member who is to perform this role may require considerable training and/or assistance (e.g. how to work with students on a one to one basis, and how to work with students in developing learning contracts.). Training for this role may require a number of workshops and/or consultant help.

Although it is recommended that the desired preservice and inservice programs be developed at this time, additional staff training activities may emerge during the completion of subtask 7, Plan Staff Orientation.

OUTCOME

Upon completion of this subtask, your planning group should have a list of staffing needs for the program or project in full-time equivalents and a plan in detail of the kind and extent of preservice and inservice training requirements. If, however, new staff are to be hired, determination of training needs should be delayed until staff are recruited and hired.

SUBTASK 3

DETERMINE MATERIAL, EQUIPMENT, AND OTHER PHYSICAL REQUIREMENTS

All materials, facilities, and equipment required to initiate and operate the program should be specified during planning, preferable by prospective program staff members themselves.

The implementation plan should include a complete list of all physical requirements, including:

1. curriculum materials, tests, and items needed to develop curriculum materials;
2. instructional facilities and necessary modifications of existing facilities;
3. equipment; and
4. transportation.

These program requirements may be derived from:

* an examination of the proposed sites where the program will operate (for building and remodeling requirements);
* visits to sites of similar programs where much can be learned, by observation and by questioning the on-site staff, about unanticipated physical requirements.

Whenever possible, the program staff should be directly involved in determining physical requirements. Not only will this produce a more accurate budget, it will also allow staff members to know why certain compromises or trade-offs have to be made. A staff that has helped to determine the environment in which it works will usually be positively affected by that environment even if it is not exactly what the staff wanted.

In some cases it will be necessary to proceed with determining physical requirements before the staff is assembled. Obtaining many physical items, e.g., remodeling, or complex equipment, requires extensive lead time and it might be detrimental to the program to delay such decisions until the whole staff is assembled.

OUTCOME

The implementation plan should contain a list of all material, equipment, and physical requirements as well as the amount and where possible the type of material, equipment, or physical modifications proposed.

SUBTASK 4

DETERMINE SYSTEM READINESS

Now that the basic requirements for program implementation are known, implementation planners should reconsider the school's ability to accommodate the new program, and to identify potential implementation problems and necessary remedial actions.

NEGLECTED TASK

Assessment of a school's readiness for a new program is frequently overlooked in implementation planning. In cases where the entire school has been directly involved--or kept informed of what is going to happen--the system may be well-prepared to accommodate the new program. However, when considerable integration between the school's existing functions and the program is required but does not exist, a variety of difficulties should be anticipated. The results of this assessment will be helpful in completing the remaining tasks of an implementation plan.

ASSESSMENT VARIABLES

Even though all facets of the existing system cannot be systematically evaluated because of the time and costs involved, a number of important areas should be considered in terms of problems which may arise during program implementation:

1. System Load. What is the student/teacher ratio, administrator/teacher ratio, present classroom usage, number of experimental projects presently in operation, number and kind of teachers involved in innovative projects, teachers' extracurricular assignments, etc.?

2. System Flexibility. Is experimentation welcome? Are classrooms the private domain of teachers? Are departments within the school closed shops? Are individual staff members aware of total system functioning?

3. System Management. What style of system management is practiced? What is the teacher/administrator relationship? How political is the system? How protective is the system of its "own kind"? What are the administrators' behavioral strengths and deficiencies

4. System Composition. What is the size and nature of the teacher support staff: counselors, aides, teaching assistants, clerks, volunteers? What is the socio-economic, ethnic, and political composition of the teacher support staff? What is the extent of community involvement and support?

5. System Awareness and Receptivity. How knowledgeable is the staff about the proposed program? Does the staff consider it meaningful and worthwhile? Is there a plan for each teacher directly and indirectly involved to experience personal benefit from the program? Are the students aware of and do they have realistic expectancies of the program? Have parents been appropriately involved and informed? Have all the schools in the district not involved in the program been sufficiently informed?

The degree to which the system is analyzed and how the analysis is acted upon will directly relate to the success of the program. Program directors may consider an emphasis on communication and involvement superfluous, but such an emphasis will help create a participative style of management and decrease resistance to the proposed program. "Excellent" programs can be reduced to "good" programs or worse when communication and involvement are neglected in planning.

OUTCOME

Because of the analysis of the school's readiness for the new program or project, your group should have developed a statement that describes the probable acceptance of the new program in terms of where potential implementation problems might occur. For example, you might decide that the planned teacher/student ratio for the new program may create friction among staff members not involved in this project, or general resistance from staff is to be expected because the "newness" of the program, or there may be indaequate management support for certain aspects of the program. Finally, as an outcome of this task, a clear statement of proposed steps on remedial actions to cope with potential problems in this area should be developed.

SUBTASK 5

PLAN STAFF SELECTION

Preparations for obtaining program staff include writing job descriptions, deciding upon staff selection procedures, assigning responsibilities for recruitment, screening, interviewing, and hiring, and preparing job information for dissemination to prospective applicants.

JOB DESCRIPTIONS

Detailed job descriptions for each position required should be prepared, if they are not already available. Some well-designed curriculum programs available from publishers include job descriptions for required program staff positions.

Each job description should briefly describe a number of job characteristics:

1. Relationship to program. How does the particular position fit into the context of the program. How does the position relate to other program staff members?
2. Length of contract. How long is the program expected to be in operation? Has the life span of the program been definitely established (e.g., one, two, or more years) with no possibility on continuation beyond a given date? What are the prospects for obtaining future employment within the system upon program termination?
3. Wages. What is the salary range? What fringe benefits are included?
4. Qualifications. What knowledge, skills, and experience are desired? In what priority?
5. Duties. What are the duties and responsibilities of the job, perhaps stated in terms of expected performance? What preservice or inservice training will be required? Will there be special reporting requirements? What "extracurricular activities" will be required?

The task analysis previously conducted to determine personnel requirements (subtask 2) should provide some of the information necessary to prepare the job descriptions.

SELECTION PROCEDURES

When detailed job descriptions have been completed, appropriate procedures should be outlined for

* recruitment;
* screening;
* interviewing; and
* selection or reassignment of staff members.

These procedures should be decided upon by the program director in cooperation with the personnel department and/or expert personnel consultants and with other staff members who will be involved in the selection of personnel.

Since the quality of the program staff is without doubt the most important variable in the success of the program, the program director should consider the advantages of employing a skilled personnel consultant either to assist in the planning of the selection procedures or to be directly involved in the selection process. The more professional, honest, and humane the hiring procedures are, the more favorable the attitude of staff members will be toward the program. A program director who operates in a participative management style will take care, during the preparation of job descriptions and during the staff selection process, to ensure that all staff members hired are also capable of operating in this way.

After responsibilities have been assigned to staff members and others regarding their part in the hiring process, the director should see that information on the jobs available is prepared for dissemination.

OUTCOME

1. *Job descriptions as outlined above;*
2. *a clear statement of the screening procedures, including the hiring timetable and selection criteria; and*
3. *a brief description of the program so that applicants may better understand their potential role as it relates to the total program.*

As soon as possible after the entire staff has been hired and explicit, detailed contracts have been signed, the program director should plan to proceed with the staff orientation outlined in subtask 7.

SUBTASK 6

PLAN PURCHASING SCHEDULE

A time schedule for acquisition of all materials, facilities, and equipment required to operate the program will help to ensure that these resources will be available when they are needed.

Programs often fail because resources are not available at the time required, e.g., test instruments are not available on the dates specified in the evaluation plan. To prevent this, a time schedule can be drawn up indicating what materials will be needed at what times during program implementation. Then, once final program approval is received, the acquisition of resources can proceed efficiently according to the time schedule.

To prepare the time schedule:

1. Review the list of required materials, facilities, and equipment prepared in subtask 3, along with the program design itself, to determine when various materials be required.
2. Whenever possible, consult with program staff members regarding their preferences as to exact specifications of resources to be acquired.
3. Consult with the purchasing agent(s) about the most efficient means of acquiring resources and the amount of lead time required for timely delivery.
4. Assign responsibilities for carrying out the acquisition schedule to appropriate staff members.

During the implementation, periodically review the time schedule with staff members to be sure that important items will be available on time.

OUTCOME

A time schedule should be developed which lists all needed acquisitions, estimated time for acquiring them, the steps to be taken in ensuring their arrival, and persons responsible for purchasing.

SUBTASK 7

PLAN STAFF ORIENTATION

This task involves determining the nature of staff orientation, how it is to be accomplished, and who is to be involved.

INITIAL PRESENTATIONS

An effective orientation of a new staff does not consist of a simple one-hour meeting at which the director introduces himself, briefly explains the program plan, and asks if there are any questions. Depending upon the size of the program, one or more complete days might be set aside for an in-depth orientation of the program team. Possible subjects to be covered by the director and other key persons involved in the original program planning include:

- history of the program;
- who participated;
- problems encountered:
- program objectives;
- program implementation plan;
- program budget;
- any other factors relating to the context in which the program originated and in which it will be implemented; and
- derivation of job descriptions so that staff members can determine how their performance contributes to the total program.

STAFF DEVELOPMENT

After these initial presentations, the staff, preferably as a group, might analyze and negotiate how each member can contribute to the achievement of program objectives. The staff should begin to understand the necessity of close cooperation and, under the leadership of the director, begin to plan precisely how and when they can work together most effectively. The first orientation session should thus be an occasion for all program team members to:

1. assume a collective responsibility for the program and its objectives;
2. experience the rewards and possible frustrations of close collaboration;
3. learn and respect the individual strengths of each colleague;
4. evaluate their group interactions; and
5. decide how often, when, and for how long they should meet for future staff development sessions.

The director may consider using a facilitator skilled in organization development techniques in this and subsequent staff development sessions to help stimulate the new staff through team-building exercises and provide feedback to group members about their productive and non-productive interactions.

All members of the staff should have copies of all significant program documents before these meetings. Trust-building is fostered by sharing the reasons for decisions and the freedoms and constraints under which the staff is expected to operate.

Organization development and participative management do not begin with the first organization session. They should be underway with the beginning of program development and continue until the program is terminated. A program director who chooses to operate in a participative management style should make this point explicit to all staff members. If this style of management is not understood by the staff members, the director or some organization development consultant might train the staff in the assumptions, concepts, and required skills of participative management. Training should stress that participative management is not a laissez-faire, tender-hearted, permissive style--it is a tough-minded, honest, open, highly accountable, collegial process which has the potential of working toward the accomplishment of program goals in a productive, creative, and personally rewarding manner.

OUTCOME

The planning group should prepare a statement that outlines how new program or project staff are to be oriented and involved in further planning and implementation. The statement should detail who is to be oriented, the content of the orientations, who is to be responsible for conducting the orientations, how many sessions are likely to be needed, length of each, time of day, how staff is to be prepared for orientation sessions (e.g., pre-orientation background reading materials.

SUBTASK 8

PLAN OTHER ORIENTATIONS

To ensure appropriate involvement of the participants and the public in program implementation, the implementation plan should provide answers to these questions:

- *Who should be informed?*
- *For what purpose?*
- *Of what?*
- *To what extent?*
- *At what time?*
- *By what means?*

ORIENT PROGRAM PARTICIPANTS

Some type of formal orientation may be required for those who will be directly involved in the program, such as

- students;
- their parents; and
- counselors.

Students should be oriented about what is expected of them while they are participating in the program. While the program is operating, they should have opportunities to express their concerns so that the staff can take appropriate action.

Those who may become indirectly involved in the program, such as

- custodians;
- secretaries; and
- other teachers and counselors who might also work with program participants, need to be informed at least of what the program is and in what ways

they might become involved in it.

PUBLIC RELATIONS PROGRAM

There should also be some effort to disseminate information to members of the public who might be interested in the program and its results. Individuals or groups who have demonstrated a particular interest in the program may require special attention. When these individuals and groups are kept informed and appropriately involved, they can contribute significantly to the success of the program. If they feel left out, they can present additional barriers to smooth implementation.

The aim of the information process is not to sell the program. Rather, the aims are:

* to promote understanding of the program;
* to generate realistic expectancies of program outcomes;
* to obtain well-informed support and involvement;
* to generate useful feedback; and
* to mitigate or even prevent ill-informed opposition to the program.

If the information program is considered a two-way communication channel, it can also serve an important evaluation function for the program. It is useful to plan occasional interpersonal forums where the various publics may be kept informed of progress and may have the opportunity to express their concerns.

If the district retains a public relations or community relations staff, its expertise ought to be utilized by the program staff. Otherwise, assign specific responsibilities for planning and implementing an information dissemination and public relations program to some staff member(s).

OUTCOME

Completion of this subtask should result in a description of what needs to be done in terms of informing non-program or project staff. It should contain essentially the same detail as the outcome of subtask 7.

SUBTASK 9

DETERMINE COSTS

The implementation plan should include estimates of the costs of all resources required for program operation and should indicate when a more detailed budget will be prepared, by whom, and in what format.

COST DATA

After program implementation tasks have been carefully analyzed to identify required resources, preparing the budget for the program becomes a matter of assigning an estimated cost to each required resource. A well-planned budget should include at least the following items:

1. Program costs. The cost of all personnel, materials, facilities, equipment, transportation, etc., called for in the program design should be specified. These costs figures may have been specified in the program design itself, but if not, the program director will have to determine them at this point.
2. Implementation costs. This includes additional personnel and other resources required to carry out the implementation procedures (e.g., costs associated with staff recruitment and selection, orientation programs, program evaluation, etc.).
3. Indirect costs. If a standard indirect cost rate has been established for the whole system, indirect costs may also be added to the total budget.
4. Income. The budget should clearly indicate, when possible, the various sources of income and, if necessary, what expenditures each income source will cover.

Local budget personnel can be of invaluable technical assistance in (a) providing both direct and indirect cost data and (b) indicating the budget format to be used. It is strongly recommended that planning groups not familiar with budgeting procedures obtain assistance from local budget personnel as early as possible in the planning process.

BUDGET FORMAT

When a budget is prepared as the culmination of a systematic planning effort, it contains a logic and persuasiveness that ordinary budget displays do not possess. For example, with the use of the program flow chart (see subtask 12), a budget can be planned to provide information on the cost of the total program, on the cost of each task, and on the cost of a particular month of operation, in addition to the line-item totals. The degree of detail required in the budget presentation should be determined by the director either in terms of its communication value or in terms of its contribution to the evaluation program.

If program budget procedures are generally used in the system, the budget may be converted to program budget format. From all data generated thus far, the director should be able to estimate with supporting detail the cost of achieving program objectives.

The well-planned budget, because it can display such a range of information, provides valuable input for

* establishing priorities;
* considering alternatives; and
* evaluating trade-offs.

With regard to trade-offs, for example, if it is suggested that a certain item be cut from the budget (e.g., two days of inservice training), it should be possible to estimate or state what effects this cutback would have on the total program. It should also be possible to state what effect a less expensive alternative would have on the program.

Even if a budget had been allocated before planning for program implementation began, it would still be essential to prepare a new budget on the basis of the analysis of tasks, required resources, etc. This more systematic preparation of a budget might indicate that the program is doomed to failure because the previously determined budget is far too low; on the other hand, systematic planning might reveal that the original budget estimate was overly generous.

OUTCOME

At this stage of budget development, it is likely that estimated costs can be generated only for each planned task. If this is the case, this section ought to include a specified date when a complete budget will be completed and who is to be responsible for its completion.

SUBTASK 10

DETERMINE SEQUENCE OF TASKS

After all implementation tasks have been identified, they should be arranged in sequential order to help implementation planners review the planning accomplished thus far and gain a more integrated understanding of the job ahead of them.

Determining the sequence of tasks consists of three steps:

1. Determine which tasks are "critical" in the sense that until they are accomplished subsequent tasks cannot be initiated.
2. Determine which tasks may be initiated simultaneously.
3. Display this information graphically.

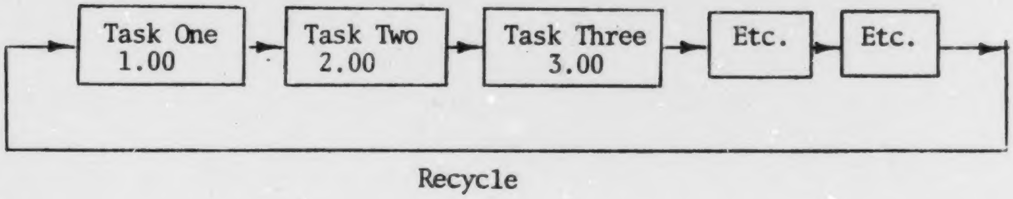
An example of a critical task might be the Board of Trustees' approval of a budget, without which the director would not be able to hire personnel or to purchase required materials and equipment. Identifying critical tasks should aid the director immeasurably in setting priorities for action. It is recommended that task worksheet (see Appendix B) be used to examine the sequence. Taping the task sheets to a wall permits the entire planning group to contribute more effectively.

TASK FLOW CHARTS

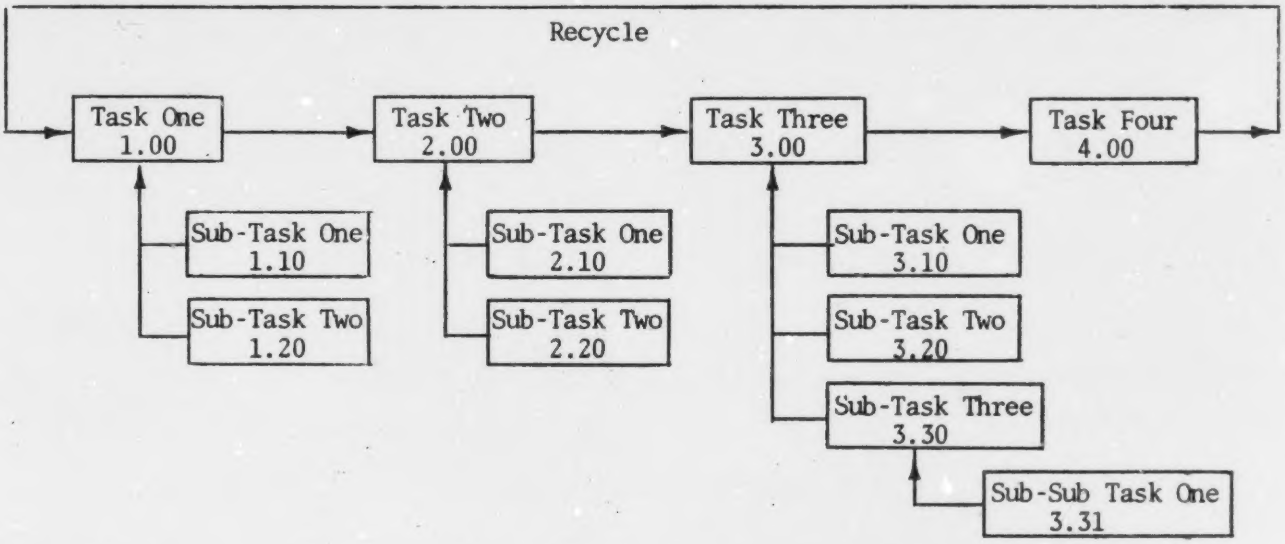
For small programs the sequence of tasks may be effectively displayed in a Task Flow Chart of Task Flow Block Diagram.* A Task Flow Chart is a method of graphically outlining the entire implementation plan in boxes, each of which contains one task, and numbering each box according to its position in the established sequence. For example:

---

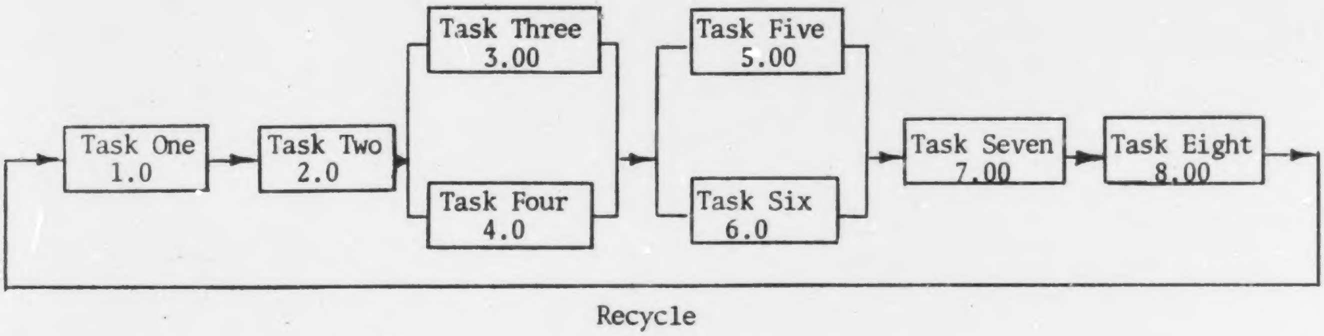
*"Task Flow Chart" and "Task Flow Block Diagram" are usually referred to as "Functional Flow Chart" and "Functional Flow Block Diagram" in systems analysis literature.


Task One
1.00
Task Two
2.00
Task Three
3.00
Etc.
Etc.
Recycle

This Task Flow Chart does not include examples of (a) subtasks or (b) tasks that occur at the same time. An example of subtask charting is:


Recycle
Task One
1.00
Task Two
2.00
Task Three
3.00
Task Four
4.00
Sub-Task One
1.10
Sub-Task Two
1.20
Sub-Task One
2.10
Sub-Task Two
2.20
Sub-Task One
3.10
Sub-Task Two
3.20
Sub-Task Three
3.30
Sub-Sub Task One
3.31

An example of charting tasks that occur at the same time without the associated subtasks is:


Task One
1.0
Task Two
2.0
Task Three
3.00
Task Four
4.0
Task Five
5.00
Task Six
6.0
Task Seven
7.00
Task Eight
8.00
Recycle

For large and complicated programs, the director may wish to use the more complicated but exacting Program Evaluation and Review Technique (PERT).

OUTCOME

A diagram showing task and subtask sequence and task relationships for the program to be implemented.

SUBTASK 11

ESTABLISH TIMELINE

A program timeline indicating when each implementation task is to be performed will enable implementation planners to keep abreast of time requirements and will provide a basis for monitoring the program's progress during the implementation and evaluation phase.

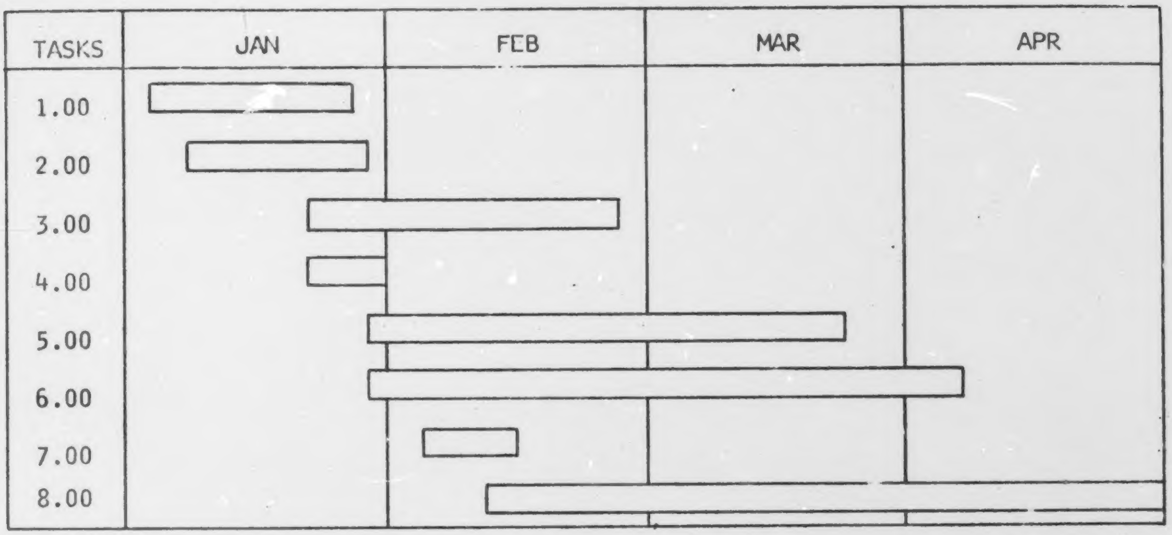
The establishment of a program timeline consists of four steps:

1. Assign a date by which each task and subtask should be initiated.
2. Estimate the amount of time required to accomplish each task and subtask.
3. Assign the date by which each task and subtask should be completed.
4. Display this information graphically.

Task Flow Charts or other displays showing the planned sequence of implementation tasks will be useful for assigning initiation and completion dates and taking into account the relationship of the tasks to one another.

BAR CHARTS

For small projects, a bar chart is an effective way of displaying the timeline. A bar chart is a vertical listing of tasks and subtasks, each followed by a horizontal bar indicating beginning and ending dates. Persons responsible for given tasks and other notational information may also be indicated on the chart. Bar charts also provide planners with a "visual picture" of the activities to be accomplished at any given time. Following is an example of a bar chart based on the third Task Flow Chart on page 73.



The bar chart should be accompanied by the Task Flow Chart, since the bar chart alone does not display the interrelationships among tasks. For very large and complicated programs, the PERT procedure is recommended, since it can clearly and precisely specify both timelines and interrelationships.

OUTCOME

A bar chart showing the estimated beginning and ending dates for each task and subtask.

SUBTASK 12

ARRANGE INDEPENDENT REVIEW

Some type of critique or evaluation of the implementation plan is highly desirable before the plan is submitted to the appropriate decision-making bodies for final review and approval.

1. Small-scale programs. Evaluation of implementation plans for small programs may be accomplished by submitting the plan to a selected group for an independent review. The reviewers selected should have experience relevant to the tasks to be performed. This group, working independently, would be asked to review and comment on the whole plan. They might also be asked to consider in detail certain portions of the implementation plan. Following the receipt of these comments, the original planners would re-examine their work in view of the additional inputs and produce a revised plan.

2. Large-scale programs. Implementation plans for complex programs may require evaluation through some type of simulation process. In district-wide programs where administrative responsibility for the program is shared by many (e.g., all the school principals in the district), such complex issues as accountability, feedback, and coordination usually require intensive review. In a simulation, various people would be asked to assume roles specified in the plan in light of their professional experience and expertise. They would be asked to note questions, observations, and concerns for a later oral critique. It is important that the criticisms of simulation participants be as objective, analytical, and descriptive as possible and that planners recognize these criticisms as constructive.

OUTCOME

A statement concerning how, when, and by whom, an independent review of the plan will be made.

NOTE:

The following tasks are not part of the actual program planning phase as illustrated in this unit. Although the first of these, Developing an Evaluation Plan, is ordinarily seen as an integral part of program planning, the amount of preparation and work that can be accomplished by the planning group is limited. However, brief descriptions of the tasks are provided in order that the planning group be familiar with the requirements of evaluation planning as well as those tasks that occur after the plan is put into operation.

TASK F

CONSIDER EVALUATION PLAN

As was stated earlier, the development of an evaluation plan should begin early during program planning because it frequently has an effect on program design itself. If the expertise for developing an evaluation plan does not exist in the school or district, it is advisable to obtain the services of an external consultant. The role of program management consists of working with the consultant to help ensure that the evaluation plan is designed to collect timely and relevant information with regard to program success and/or needed modifications.

Program or project management should be concerned with such issies as:

1. Identifying the necessary and feasible decisions to be made about program modification, and specifying who makes these decisions;
2. Identifying alternative courses of action for decisions in the instructional management area;
3. Determining what information is relevant to modification decisions;
4. Taking responsibility for or contributing to a plan for collecting, organizing, and analyzing program modification information; and
5. Using information about program effectiveness to modify instructional programs.

A training unit titled Evaluation for Program Involvement treats the above topics and is available from the Far West Laboratory for Educational Research and Development, 1855 Folsom Street, San Francisco, CA 94103.

OUTCOME

A decision concerning the procedures to be followed in obtaining an evaluation plan and who will be responsible for compliance.

TASK G

SECURE APPROVAL OF PLAN AND BUDGET

The first task to be accomplished upon implementation will be to forward the program implementation plan with the accompanying budget to the appropriate decision-making bodies for final review and approval.

The judgment made at this point will be a "go" or "no go" decision. Chances are that a "go" decision will mean approval of a plan and budget which differ, at least to some extent, from the original program plan and the original budget estimate. For this reason, the decision makers should have the opportunity to review the implementation plan before it begins. If the budget submitted is significantly higher than the original estimate, the planners should be prepared to negotiate with the decision makers and to suggest alternatives, trade-offs, and compromises when appropriate.

The final plan will serve as a detailed contract between the program administrator and the decision makers--a contract which in effect says, "With your approval, we will accomplish these objectives, for this amount of money, by these means, with these resources, and according to this time schedule."

"GO"

The decision-making bodies may approve the program plan and budget as presented or they may insist on some modifications. After such modifications have been made, the revised plan will probably have to be returned to the decision makers to make sure that it accurately reflects their decisions. Once the implementation plan is approved, this decision and information about the approved program will have to be disseminated to all those who will be directly or indirectly involved.

"NO GO"

If for various reasons the plan is not approved, a variety of tasks will need to be completed. Programs should be terminated rather than allowed to fade away. All persons previously involved in the program planning should be notified of the program's termination and the reasons for this decision. Many good programs are not undertaken in one system for a variety of reasons which may not be relevant to another system. It will be the obligation of management to let all interested parties know what has happened to the program and the obligation of the decision makers to articulate the reasons for their decisions.

OUTCOME

The planning group should detail who the appropriate decision-making person or persons are, indicate when a final decision concerning program implementation can be made, who will present the plan to the decision makers, and how possible modifications are to be accomplished if necessary.

TASK H

INITIATE AND OPERATE PLAN

The success of initiating the implementation plan depends to a large degree on the successful performance of the preceding tasks. If all the preceding tasks have been carried out, all staff members will (a) know what they have to do, (b) be prepared to do it, and (c) perform their parts in the initiation of the program at the appropriate times.

PREVENTION OF OPERATIONAL PROBLEMS

The initiation of the plan is critically important because mistakes or failures made at this point tend to become irremediable. Problems in initiation can usually be traced to deficiencies in the implementation plan itself. For example, problems often arise because of:

- unforeseen contingencies which could have been identified by more thorough planning;
- insufficient preparation allotted to the staff; or
- a lack of clear communication in the assignment of job responsibilities.

To prevent the occurrance of as many initial mistakes as possible, the planning group should conduct a "readiness check" that includes:

1. a step-by-step review of the entire implementation plan; and
2. an assessment of the status of all tasks that should have been completed or undertaken to date.

PROGRAM MANAGEMENT

Once the plan is operating, the program director's role is to help the program run smoothly and effectively according to plan. To accomplish this, the director may be required to assume varied roles:

1. Facilitator. During regular staff meetings, the director will keep abreast of the progress and required changes in the program, the staff members, and the program participants. Whether these changes consist of additional resources, additional inservice training, more effective interpersonal relations, or assistance in problem-solving, the director should make every effort to ensure that the requirements are met or that the staff realizes why they cannot be met.

When problems or difficulties arise during this and subsequent phases, the director should bear in mind this problem-solving concept: "Work the problem, not the people." In other words, determine the degree to which the concerns of individuals or groups are adversely affecting program activities and objectives, then develop procedures for solving the problem rather than initially attempting to identify staff members who are at fault and solving the problem by assigning blame. It may be that the concern is a culmination of a series of events and not specifically related to any single individual or group. It may also be that problem resolution will occur only after thoughtful re-evaluation of the procedures of the entire subsystem involved. One of the management's most important functions is to assist the entire staff in efficient problem solving, as well as in maintaining an attitude of continual self-monitoring, problem anticipation and prevention, and realistic mutual support.

Management also has the responsibility to keep the entire staff aware of the program as a whole. When staff members lose sight of the total program, subsystem interaction tends to decrease and program effectiveness tends to decline accordingly.

2. Monitor. Through the staff meetings and other regular reporting procedures, the director will monitor the program at regular intervals to ensure that all activities are proceeding according to the timeline in the implementation plan. The director will have to continually obtain and use complete, accurate, relevant, and timely information on the status of the program. This information should come from status reports presented regularly at staff meetings. In complex programs, a responsive management information system with data processing components may be required.

When delays or other problems are pinpointed, the director should meet with the staff to determine causes and arrive at solutions. Often, monitoring will be systemized as a formative or ongoing evaluation component of the program.

3. Advocate. The program staff should recognize the director as their advocate with superiors and with other decision-making bodies in the educational community. They should be confident that the director is knowledgeable about all phases of the program and capable of dealing with any questions in their absence.

Their director will not always be able to answer every question in detail, but should be able to discuss the concepts involved and feel free to refer technical and other specific questions to appropriate staff members for elaboration without abdicating responsibility. The manager's advocacy is not based on the premise of blind faith in the program or in the staff, but rather on knowledge of program goals and objectives, awareness of staff performance, and recognition of problems and needs.

The more management tends to make decisions for others, the greater the demand for closer supervision and monitoring of staff. Management frequently does not have the specific information necessary to make effective decisions without the help and input of the staff members directly involved in the program.

OUTCOME

A general understanding on the part of the program director concerning his or her role in directing the program/project.

TASK I

CONCLUDE PLAN

It will be especially important for the director to monitor the concluding phase of the program to make sure that all planned activities are carried out as scheduled.

The concluding weeks or months of the program are critical because they offer the last opportunity to carry out activities directed toward the achievement of program objectives. There seems to be a natural tendency on the part of program staff and participants to coast through the final phase both (a) because "most of the work has been done already" and (b) because of a variety of distracting details related to the termination of the program. The program director must be vigilant during the concluding phase to ensure that program tasks do not fall hopelessly behind schedule.

If a posttest is to be administered to program participants, it should be scheduled after all program activities have been concluded. The practice of administering posttests weeks before program activities are concluded will encourage the "coasting" syndrome. The program implementation plan should allow adequate time, preferably after all activities have been concluded, for the staff to prepare evaluations and final reports and complete the many tasks associated with the ending of the program.

OUTCOME

None for implementation planning group.

TASK J

EVALUATE PROGRAM

> *An adequate evaluation should supply the director with all the information necessary to make a recommendation about the future of the program to the appropriate decision-making bodies.*

Let us assume that the program has just terminated and that all data and reports have been compiled according to the schedule in the implementation plan and submitted to the person(s) responsible for preparation of the final summative evaluation. The next steps are for the evaluator(s) to (a) analyze, (b) interpret, and (c) synthesize the data into a final evaluation report to be submitted to the director and other decision makers. The purpose of this evaluation is to provide information which will be used in making decisions about the future of the program or other similar programs.

TYPES OF EVALUATION INFORMATION

If an evaluation is to fulfill its ultimate purpose, i.e., to provide complete, accurate, relevant information for decision making, it should describe and measure three types of information:

1. information about the end product (i.e., the achievement of original program objectives);
2. information about the processes used (i.e., the effectiveness of program activities); and
3. information about unanticipated outcomes in addition to the planned outcomes of the program.

Since decisions are made at every state of the program, information gathering and evaluation should be a continuous process throughout the operation of the program. All information gathered (e.g., pretest scores, feedback from parents and students, etc.) should be shared with the staff so that their participative decision making is based on the most complete and reliable data.

STAFF FEEDBACK

In order to increase the value and accuracy of the evaluation information, the program staff should be given some time to examine the evaluation in draft form, react to it, and offer their recommendations about the future of the program. Thus the evaluator will have the benefit of an interpretation of significant successes or failures from the people who have experienced these successes or failures. He will also be able to obtain additional relevant information which may have been overlooked in the reports submitted.

If for some reason the evaluation must follow a more rigorous experimental research design, the type of staff feedback described may be postponed until the evaluation report is completed, at which time it can be compiled as a supplementary report.

OUTCOME

None for implementation planning group.

TASK K

DETERMINE PROGRAM FUTURE

Decisions made by the director and other appropriate decision makers concerning the future of the program should be based on the findings of the evaluation report.

DECISIONS REQUIRED

An adequate evaluation report should provide all the information necessary to decide the future of the program intelligently. In addition to the basic question of whether the program has met its objectives, particular questions about the program's future will have to be answered:

* Should the program be continued?
* Should outside or local funds be used?
* In what ways should it be modified?
* Is the program replicable in other organizations?

In some cases decisions concerning program continuation are required before the final evaluation is completed. If such a possibility exists, then the program evaluation design should include periodic data collection procedures that will provide at least trend results for the decision makers.

PROGRAM CONTINUATION

If a decision is made to continue the program, the cycle of planning for implementation should begin again. This time probably only modification of the existing plan will be required. Whatever decision is reached, it should be communicated to all parties who have been involved or interested in the program. The reasons for the decision should also be publicized, especially if they appear to contradict the conclusions of the evaluation report.

OUTCOME

None for program implementation planners.

APPENDIX A

PROGRAM DESIGN FOR EXPERIENCE-BASED CAREER EDUCATION

(Example of a Comprehensive Secondary School Program)*

I. Introduction

Experience-Based Career Education takes as its premise that education is a planned and guided process by which adolescents move toward adulthood. It is an organized and directed series of events that help students decide who they are, who they want to be, what they want to do, what they want to know, and experience. Education provides a means of grappling with these questions by arming young people with ideas and skills, by encouraging them to question their interests, values, and goals, and by challenging them to experience both the problems and the richness of the real world. Therefore, using the entire community as a learning resource, Career Education seeks to provide students with a secondary education in such a way that they acquire the skills and knowledge necessary to choose, enter, advance and find satisfaction in an adult role.

This definition and statement of purpose for education rests on certain values and key assumptions. These are presented below.

II. Values and Assumptions

A. The values of concern are those which influence the development and implementation of educational programs and not those which education might attempt to develop in the learner. The following set of values about education has influenced the design of a career education program.

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*The Experienced-Based Career Education program described here is under development by the Far West Laboratory for Educational Research and Development. This example contains more detail than is generally available for most program or project designs. Inclusion of statements concerning values, assumptions, and organizing concepts have value in tracing logical consistency and achieving consensus among various constituent groups.

1. Education is a potential strong force toward the improvement of the human condition.
2. The development of the individual is the greatest value that an individual can realize for himself and contribute to the society in which he lives.
3. Interaction with both peers and adults has significant value in the development of an individual.
4. The potential inherent in the uniqueness of the individual is the greatest single source of value and worth.
5. The design of education should be guided by the recognition of the freedom and dignity of the individual and by the recognition that the individual lives in and should be a contributing member of society.
6. The individual (learner) has the right to participate in making educational choices and decisions.

These value statements assign education an extremely important position in the human enterprise and suggest that because the improvement of the human condition is a life-long enterprise, so then is learning. Further, the value of the uniqueness of the individual and the support and development of uniqueness are stated as a major thrust. Finally, the role of the learner in education is assigned a central and dominant position. To supplement the values and provide further guidance to program designers, assumptions about the learner and about learning are given.

B. Assumptions About the Learner

1. The individual has a basic desire to learn, to seek and search for knowledge, and acquire competence.
2. The individual is capable of initiating, directing, and assuming increasingly more responsibility for his own learning.
3. There are differences among learners and these differences exist on many dimensions.

C. Assumptions About Learning

1. Intrinsic motivation is the most powerful facilitator of learning.
2. The most potent satisfiers to the learner are discovering something new and achieving new skills and competences.
3. Self-confidence in the learner develops as a result of successful exploration, discovery, or mastery at increasingly higher levels of complexity and realistic aspirations.
4. Learning is enhanced when the learner becomes an active participant in planning and conducting the learning process.
5. Very often, the best solutions to the facilitation of learning are those that evolve from the processes of planning, experiencing, and replanning.
6. Assessing progress in learning should include self-evaluation.
7. Evaluation of learning should be appropriate to the particular learner and to the situation in which learning has occurred.
8. There are different kinds of learning, implying different conditions of learning and different approaches to the facilitation of learning.

9. Transfer of learning is best facilitated if learning occurs in functional contexts that have meaning for the learner.

These values and assumptions provide guidance to describing a set of organizing concepts which indicate what the educational program should provide and the type of environment in which learning should occur.

III. Organizing Concepts

Organizing concepts guide and direct the planning and implementation of educational programs. A synthesis of the values and assumptions suggests that the school should:

A. Provide for conditions of learning and approaches to the facilitation of learning that are based on individual differences and on the kind of learning in which the student is to be involved. Because learners vary widely in what they know and what they can do, there needs to be planning in terms of the student's capabilities and accomplishments before and after any learning enterprise. The program should emphasize mutual planning between adults and students based on student interests and needs before and following projects. Methods for pursuing learning and modes for demonstrating achievement are varied and selected for the individual situation. A clear definition of goals is prerequisite.

B. Provide for learning which is not separated from the community and society, which should further be built around life situations when possible, and which emphasizes a genuine interaction between the learner and the environment. A supportive social environment should be developed and nurtured. The use of functional contexts so that (1) transfer of learning is enhanced, (2) student interest in dealing with the content of learning remains high, and (3) there is a maximum interaction between the learner and adults in the community as well as between peers is seen as essential.

C. Provide for situations in which learning goals and activities can emerge and evolve rather than always occurring in an overly prescriptive pathway. Thus, schooling should to the extent possible be responsive to the learner's needs, be learner-directed, and learner-active. Students should assume gradually increasing responsibility for their own learning in terms of expression of learning goals, planning programs, and developing and carrying out projects.

D. Provide for learning situations which facilitate genuine exploration, discovery, and mastery of skills; attainment of competences that are applicable, useful, and satisfying; and the recognition of achievement. Meaningful learning occurs as new content is experienced and organized into the learner's cognitive structure. The learning process should be organized in order that the learner can engage in activities which have relevance to his or her own purposes, which are geared to increasing the learner's capability to explore, analyze, synthesize, and problem-solve, and which assist the learner to become independent and self-reliant.

E. Provide for constructive evaluation that is relevant to the learner and the situation in order that the learner perceive self-improvement. Further, it should emphasize self-evaluation to permit the learner to be deeply involved in self-improvement. Procedures should call for frequent evaluation of activities and projects both during and upon completion by the student and his learning coordinator in order to ensure feedback to the student.

F. Develop and nurture the attitude that learning, self-improvement, and the improvement of the human condition is a life-long process. By focusing on clear definitions of student goals, ensuring feedback on progress, and increasing assumption of responsibility for one's performance, and by providing a supportive social environment, the development of persistent motivation for learning will be enhanced.

IV. Major Design Requirements

Using the above set of concepts about how education should be organized, a career education program rests on the following key design requirements. It should be:

A. Experienced-Based. The "community as school" concept provides a functional context that enhances learning, in terms of both motivation and substance, by enabling students to:

1. Improve and perceive the relevance of basic skills by using them to solve real (not simulated) problems in everyday life (not artificial classroom) situations, and by being challenged to communicate at an adult level.
2. Translate concepts, abstractions, and principles into actual experience and test them out through practical application as they are in fact employed in real-life tasks.
3. Develop a sense of responsibility and self-reliance by participating in vital daily activities that call for solving problems, making decisions, and perceiving and accepting the consequences of one's own actions.
4. Acquire first-hand information about what people actually do in their daily work, how they feel about what they do, and

what kinds of knowledge and skills are needed to enter and function effectively in the adult world.

5. Integrate learning in ways not possible in the traditional classroom. Career education exploits the fact that human experience does not conveniently divide itself into airtight compartments called skills or subject areas. It enables a student to develop his abilities in several areas--academic, occupational, social, and personal--as these skills and knowledge are applied interactively in actual experience.

B. Career-Oriented. Because occupational choices play a powerful role in shaping our sense of identity, self-esteem, and lifestyle, a focus on career preparation should be an integral part of a person's education. Since "career" is defined broadly as "one's progress through life" and not as a particular job, the notion of career preparation means providing students with a cumulative series of planned, personalized learning experiences in a wide variety of life/work settings that:

1. Help students know themselves better by seeing themselves, their capabilities, and their reactions in a variety of situations; develop realistic goals based on accurate appraisals of their interests, abilities, and needs.
2. Give them a broad understanding of the world of work--its rewards and shortcomings, what they can expect from it, and what it will require of them.

C. Student-Centered. The student acts as planner, decision maker, and self-evaluator within the general framework of career education goals and procedures. This personalized, learner-directed approach enhances learning in the following ways:

1. It accommodates human uniqueness by allowing each student, to the extent possible, to pursue his particular needs and interests, at his own pace, and according to learning methods best suited to his tastes and capabilities.
2. It increases motivation to learn by allowing the student to pursue genuine interests and concerns, to answer questions, and to solve problems he perceives as relevant.
3. It allows the student to plan and carry out his own learning program; requires the student to make his own decisions, act on them, and face the consequences of those decisions; and increase self-reliance and a sense of initiative. The increasing assumption of responsibility for his own learning and the perception of himself as being "treated like an adult" foster confidence, both in himself and in the process of learning.

D. Adult Roles. The task of adults (staff as well as resource persons) is to provide a supportive environment, and to guide and assist students in planning, achieving, and evaluating accomplishments. The role of adults is to help students become adults, to help them learn how to learn, to think for themselves, make decisions, solve problems, work with others, keep their commitments, and seek guidance and assistance when they need it. To facilitate student learning, to accommodate individual student needs, and to help young people make the transition to adulthood, career education:

1. Involves a variety of competent adults with diverse backgrounds and expertise as colleagues in the educational process,

serving as models and sharing their particular expertise, skills, and knowledge of the world with students.

2. Redefines the role of school staff, who become primarily learning coordinators and facilitators rather than teachers of conventional subjects.

V. Specific Characteristics

A. Content Scope. The program is designed to accentuate an interdisciplinary approach to learning. However, opportunities for students to focus on single subjects or disciplines should be available.

B. Content Organization. The career education program should operate within a general framework, without pre-determined sequence of learning. Learning paths are planned by students and staff, but may be modified based on experience, changing interests, or fortuitous events. As such, content organization may be sequential, thematic, chronological, inductive, or deductive. The major unit of student work is the project.

C. Teacher Function. Teachers (learning coordinators in FWL-EBCE) are responsible for providing and organizing a supportive social environment; to guide and assist students in planning and achieving and evaluating accomplishments; to direct students to useful resources for learning. Thus, the teacher role is multi-faceted including resource person, contractor, diagnostician/prescriber, information purveyor, etc. How learning coordinators organize (e.g., as a team, as individuals responsible for a certain number of students) may vary depending on staff preferences. The staff may include basic skills specialists, and they may be subject matter specialists or generalists depending on the needs of students and available staff preferences.

D. Student functions. The student acts as the primary planner/performer. With the help of his/her learning coordinator, the student increasingly becomes a self-directed learner.

E. Teaching-Learning Methods. A variety of methods are recommended. Although, practical experience is emphasized, varying student needs will undoubtedly call into play other methods including demonstration, programmed instruction, discussion/seminars, discovery/inquiry, research/synthesis, etc.

F. Student Grouping. Generally the program will be non-graded and thus is multi-graded; groups that are formed are heterogeneous and usually based on student interest. In some cases, (e.g., basic skills instruction) grouping will occur by achievement. A learning coordinator may be assigned up to 25 students, but student group size will vary widely depending on student interest and need. A learning coordinator's students may meet as an entire "class" only periodically.

G. Materials. Learning packages for various career areas should be developed (e.g., biological sciences, commerce, physical science, communication and media, politics, etc.). Packages are defined as frameworks for study rather than the content itself. A package will include such items as introductory material, suggested learning objectives, suggested projects, descriptions of available resource people, resource organizations, community resources, etc. Thus, packages provide ideas and suggestions for project content and identify the resources which students can use to carry out their plans.

Also, the program recommends the availability of career information, programmed materials, diagnostic materials, and provides an assortment of student planning, progress reporting, and monitoring forms.

H. Equipment. No specialized equipment other than ordinarily available to schools is required.

I. Physical Setting. A learning resource center to house materials and records, to provide work space for learning coordinators and for students to meet in groups or individually with learning coordinators is needed. Students spend at least 5C% of their time out in the community with various resources, thus facility requirements are substantially less than for regular classroom programs. Where the resource center is located (on existing school grounds or separately) depends on preferences of the school district.

J. Student Evaluation. The program should be designed to emphasize evaluation conducted jointly by the students and his/her learning coordinator and based on perceptions of progress and completed projects. In addition, information from community resources with whom the student has worked is helpful. Generally, assessment of student progress is based on change in performance and attainment of objectives rather than on external norms. Use of standardized tests would be for the purpose of diagnosing skill needs and/or fulfilling district evaluation requirements.

VI. Goals and Career Education - Students should be:

A. Motivated to learn: work at it, view every situation and every human contact as an opportunity to learn something.

B. Planful: not only about their long-range futures, but about what they want to do and achieve.

C. Self-reliant: able to set their own goals, plan activities, manage their time and other resources, work independently, recognize when they need help and seek it, evaluate their own behavior and learn from it, and accept the consequences of their own decisions and actions.

D. Capable of interacting with adults as equals: know what is expected of them as adults, able to communicate on an adult level, able to make and keep realistic commitments to others, and have reasonable expectations of others.

E. Capable of making realistic and satisfying career choices: more informed about career options and requirements, and more aware of their own values, needs, goals, strengths, and limitations.

F. Independent learners: able to identify what's worth learning, identifying and use effective sources and methods of acquiring information, analyze, evaluate, and incorporate new information into their own knowledge and experience base.

VII. Objectives

The objectives that follow have been derived from the goals and are examples of what graduates will know or be able to do. They are organized into three broad categories: career development, basic skills, and life skills--each with two or more subheadings. The specific behavioral objective under each subheading are shown in order of priority.

A. Core Student Outcome Objectives

Career Development Objectives

Self-Development

1. The student will demonstrate awareness and understanding of his or her own current interests, abilities, values, and limitations relevant to career goals selection and achievement, and recognize that these may change with further education or experience.

2. The student will demonstrate self-reliance and ability to function responsibly and independently in daily activities; i.e., he will be able to plan activities and manage time and other resources to accomplish goals, keep commitments to others, follow through on planned activities seeking guidance or assistance as necessary, evaluate his own behavior and performance, and accept responsibility for actions taken.

Career Decision Making and Planning

1. The student will have a positive attitude toward planning his future education, career(s), and lifestyle.

2. The student will have integrated (related) information about occupations with information about self.

3. The student will have located and used information about occupations.

4. The student will know some of the factors associated with self-selected occupations that contribute to job success and job satisfaction.

5. The student will have obtained employment information, completed job applications, taken interviews, written letters of application, prepared a resume.

6. The student will have demonstrated that he has made an informed decision regarding his post-high school educational/vocational plans.

7. Those students who have tentatively selected a career area will have begun to acquire some of the related job-entry skills and experience.

8. The student will know the functions, characteristics and requirements of a broad range of self-selected occupations.

Basic Skills Objectives *(To be demonstrated when in appropriate situations requiring the use of the skill.)*

Oral Communications

1. The student will communicate facts, ideas, and feelings

in a manner that is effective and appropriate to various situations (social, school, or work).

2. The student will listen effectively.

Writing Skills

1. The student will communicate facts, ideas, and feelings in writing so that most people can understand what was stated.

2. The student will write letters, descriptions, and reports required in daily life.

3. The student will demonstrate performance of writing skills necessary for his chosen career or continued education.

Reading Skills

1. The student will read selections from a newspaper or other popular periodical and (a) recognize the author's purpose and (b) locate specific facts and details.

2. The student will read and comprehend materials pretaining to his areas of career involvement, such as instructions, manuals, forms, parts lists, and technical articles.

3. The student will read and comprehend materials appropriate to his vocational and recreational interests.

4. The student will read selections required for educational or occupational advancement and (a) define the author's purpose and support that definition with evidence, (b) identify and explain different levels of meaning included in the selection, (c) identify biases with supporting evidence, (d) extend interpretation beyond the printing information, and (e) recognize and describe different writing styles.

Basic Quantitative Skills

1. The student will perform arithmetic operations necessary for successful daily living, such as (a) making and receiving change, (b) budgeting, (c) banking, (d) completing tax forms, (e) doing comparison shopping, and (f) generally dealing with weights, measures, calendars, and clocks.

2. The student will comprehend and interpret information presented numerically and graphically as found in such media as newspapers and weekly news magazines.

3. The student will perform mathematical operations necessary for his chosen career or continued education.

Life Skills Objective *(To be demonstrated when in appropriate situations requiring the use of the skill.)*

Interpretation Skills

1. The student will effectively participate in peer and adult interactions based on understanding of roles and obligations, acceptance of the validity of individual rights and perceptions, and ability to contribute to the resolution of conflicts resulting from differing personal needs and values.

2. The student will cooperate with others as a means of attaining goals.

Problem-Solving Skills

1. The student will define a problem by identifying a need or a discrepancy between what is and what he thinks should be. This can be in a personal, group, societal, academic, or career situation.

2. The student will use a variety of sources and techniques of data gathering.

3. The student will propose or generate alternative solutions, anticipate consequences of various solutions, choose or combine solutions, and implement a chosen course of action.

Decision-Making Skills

1. The student will recognize decisions that need to be made, including when they must be made.

2. The student will identify alternative choices or options and their probable outcomes.

3. The student will identify personal values and goals which relate to the decision being made.

4. The student will choose the alternative that fits best with personal values and goals.

5. The student will accept responsibility for his decision.

Inquiry Skills

1. The student will develop and expand his skills of inquiry and critical thinking including such functions as classifying, comparing/contrasting, defining, interpreting, generalizing, inferring, hypothesizing, predicting, analyzing, synthesizing, and evaluating events and written or spoken material.

B. Elective Student Outcomes

The objectives above define the core curriculum of the Futures High School program. These are areas in which student achievement of knowledge, skills, and experience are deemed essential. The Futures High School instructional system should also provide learning opportunities in other areas desired by the student, his parents, employers, or higher education institutions. But these are areas where growth may occur at any time if the student has acquired the basic core knowledge and skills essential to independent learning and adult living. These other curriculum areas are thus elective for individual students depending on their interests, goals, abilities, previous education and experience, and needs to meet public school or college entrance requirements.

Elective Life Skills Objectives

Media Skills. The student will communicate or understand ideas or feelings expressed through media other than written or spoken words.

Physical Fitness and Health. The student will develop the knowledge and skills necessary to maintain good health and physical fitness.

Social and Cultural Awareness. The student will understand his social and cultural heritage as a means for understanding himself and his physical and social environment.

Political Awareness. The student will understand the basic workings of politics and government and the effect of governmental policies and activities on his daily life, and learn to effectively use his resources as a citizen to influence governmental action.

Economic Competence. The student will understand the basic economic forces that affect his daily life and will be able to effectively manage his own economic resources.

Technological Skills. The student will acquire knowledge and proficiency in using a variety of tools, equipment, machines, and instruments appropriate to his own interests, needs, and goals.

Aesthetic/Creative Development. The student will be aware of aesthetic forms, both natural and man-made, and of various means and styles of artistic and creative expression, and will explore and/or pursue in depth any of a variety of forms of creative self-expression.

Social Science. The student will understand and use the concepts and methods of social science inquiry and his knowledge of the structure and organization of the various scientific disciplines.

> *Science*. The student will understand and use the concepts and methods of scientific inquiry and his knowledge of the structure, function, and organization of the various scientific disciplines.
>
> *Mathematics*. The student will understand and become proficient in one or more fields of mathematics.
>
> *Foreign Language*. The student will explore and/or develop proficiency in one or more foreign languages.

VIII.

Following an analysis of a number of career education programs, the school staff determined that the Far West Laboratory's model of Experience-Based Career Education program was highly consistent with their own intentions and desired program characteristics. A decision to adopt the model on a pilot basis was made. They also determined that the requirements for implementing the FWL-EBCE program for some students were within the resources of the school district and specifically at Futures High School.

A functional analysis of the FWL-EBCE model (see Figure 1) showed that for the total model to be adopted, certain functions needed to be performed; to perform these functions, Futures High School would need to organize or have available various components, and specific handbooks were available to assist the school to perform the functions.

Figure 1

A FUNCTIONAL ANALYSIS OF FWL-EBCE DOCUMENTS

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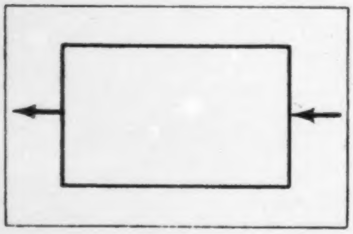
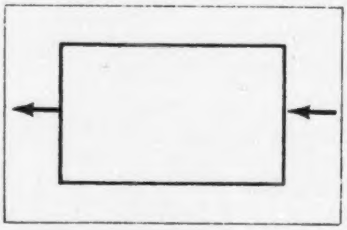
FUNCTIONS *What the school needs to do to implement EBCE*	COMPONENTS *What school has organized to perform functions*	DOCUMENTATION *What FWL-EBCE provides to assist schools*
I. PROVIDING STUDENT GUIDANCE/INSTRUCTION ○ *Orienting new students to EBCE* ○ *Assessing students needs & interests at entry* ○ *Planning student programs* ○ *Monitoring student programs* ○ *Assigning student credit* ○ *Provide integrative support to learning process* ○ *Keeping student records*	*Instructional and Support staff (Learning Coordinators and Assistants) capable of performing required functions*	○ *Student Orientation Handbook* ○ *Student Guidance Handbook* ○ *Student Information Handling Handbook*
II. DEVELOPING & ORGANIZING LEARNING RESOURCES A. *Community Resources* ○ *Analyzing need for resources* ○ *Recruiting resources* ○ *Developing resources* ○ *Maintaining Resources* ○ *Developing and maintaining resource files* ○ *Developing learning packages for use in project planning*	*A pool of.....* ○ *Resource persons (RPs)* ○ *Resource organizations (ROs)* ○ *Community organizations (CRs)* *Identified, organized, willing, and capable of providing learning activities for students* ○ *A set of learning packages in subject matter/career areas used by students and staff to plan projects*	○ *Resource Development & Maintenance Handbook* ○ *Resource Information Handling Handbook* ○ *Learning Package Development Handbook* ○ *Five Learning Packages (in selected subject matter/career areas.*
B. *Supplementary Resources (courses, workshops, tutoring, and instructional materials)* ○ *Identifying needed resources* ○ *Developing & maintaining supplementary resource file* ○ *Organizing resource file for use by students*	*A materials center and/or descriptions, schedules, procedures, etc., for providing needed supplementary resources for learning*	○ *Supplementary Curriculum Handbook*
III. PROVIDING ADMINISTRATIVE SUPPORT ○ *Developing and maintaining relationships with local schools, community, etc.* ○ *Establishment & coordination of Policy Advisory Board* ○ *Providing staffing and logistical support*	*Organization, staffing, and procedures to provide administrative support*	○ *External Relations Handbook* ○ *Center Administration*
○ *Training staff*	*Plan for ensuring adequate staff performance*	○ *Staff Development Materials* ○ *Overview of EBCE*
○ *Recruiting students*	*Mechanism and procedures for selecting students*	○ *Student Recruitment Handbook*

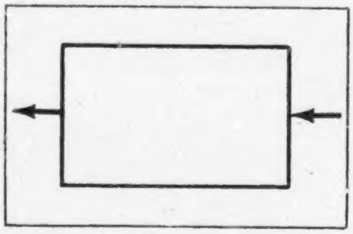
APPENDIX B

TASK WORK SHEETS

It may be helpful during the planning sessions to have available a number of task and/or sub-task work sheets which can be taped to a surface to facilitate the group's work. The suggested work sheets are 8-1/2" X 11" paper containing the illustrated box and arrows suggesting the flow of events (tasks and/or sub-tasks).







The work sheets can be used as follows. As the group or a member of the group suggests an implementation task, it is immediately written in bold letters on a work sheet and posted for all to consider. As each task is suggested, the group may wish to make some judgments about the general order (which task precedes which task) and relationship (which tasks appear to be correlated) before posting. Once all of the tasks have been posted, the group should then decide whether certain tasks should be combined, reduced to sub-tasks, or simply restated, and whether certain sub-tasks should be modified, subsumed under different tasks, or considered separate tasks. Once all of the tasks and sub-tasks have been initially defined, they can be rewritten in a manageable form and copies distributed to the group. It is helpful to state all tasks in an active verb form; that is: "Determine," "Perform," "Prepare," etc.

APPENDIX C

GLOSSARY OF TERMS

Feedback:

Any information which is an output of some process and which can be used as new input for decision making.

Input-Output

Input may be defined as the human and material resources which are utilized in any given process to achieve a desired outcome.

Output is the product or outcome of any given process. In flow block diagrams, the process is represented graphically by a box; the input is represented by an arrow going into the box; and the output is represented by an arrow coming out of the box.

Intervention:

An activity, process or program which is new or foreign to the system into which it is introduced.

Organization development:

A process of intervention into existing organizations, derived from the experiences of various behavioral sciences. Such intervention may have a short-term objective of improving the organization's effectiveness in problem-solving, decision making, or interpersonal relationships; or it may have the long-range objective of moving the total organization toward a participative management style.

PERT(Program Evaluation and Review Techniques):

A method of analyzing and graphically illustrating the expected times of completion of a complicated program, the times of completion of the sub-programs of which it is composed, and the estimated variances associated with these expected times of completion.

System:

An interacting group of entities forming an organized whole. More specifically, a deliberately designed systematic entity made up of diverse but independent components that interact and are united according to some organizing idea, plan, or central principle. A system becomes more than the aggregate of its components.

Systems analysis:

There are two basic kinds of systems analysis. Exploratory systems analysis aims to lead to the definition or selection of a problem to be solved or system to be designed. Evaluative systems analysis probes into the adequacy of an existing system.

APPENDIX D

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